WORKING FOR ALBERTANS | 2002 YEAR-END REVIEW

EUB Alberta Energy and Utilities Board

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CONTENTS

ALBERTA ENERGY AND UTILITIES BOARD
STATISTICAL SERIES (ST) 2003-41:
2002 YEAR-END REVIEW

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ABOUT THIS PUBLICATION

The EUB's *Year-End Review* provides Albertans with information about what the EUB did in the past year, along with an overview of activity in Alberta's energy and utilities sectors.

3 Message from the Chairman

5 Message from the EOO

6 About the EUB

8 History: Starting with the Third Meridian

10 Liability and Orphan Wells: Following Through

12 Alberta's Oil Sands: The Momentum Continues

14 Inspiring Public Confidence: Mutual Learning

16 Environmental Partnerships

18 A Year of Change in Utilities

20 Appropriate Dispute Resolution (ADR)

22 Working with Technology

24 Public Safety and Sour Gas

26 Working at the EUB

27 EUB's Face in the Field

31 Working Across Alberta

35 Applications, Hearings, and ADR Summary

37 Alberta Energy and Utilities Resources 2002

45 EUB Staff in 2002

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EUB Alberta Energy and Utilities Board

EUB BOARD MEMBERS

Neil McCrank, Chairman

In everything we do at the EUB, our underlying goal is to serve the public interest. But public interest means many things to different people. From our standpoint, it means one very simple thing: working for Albertans. And by Albertans, we mean everyone who lives in this province, including landowners, rural and urban residents, employees of Alberta businesses, plus the companies and industries we regulate.

This concept is the cornerstone of our organization, and in that way it is part of everything we do. It is also the theme of this review of our accomplishments in 2002. This publication also marks a departure from our previous yearly review, *Regulatory Highlights*, both in its expanded content and its appearance.

There were some major initiatives in 2002 that underscore our dedication to the goal mentioned above. Of these, four are particularly important both to us and to the people and industries we serve:

- The ongoing implementation of the Public Safety and Sour Gas Committee's 87 recommendations, which we have committed to fully implement, arose out of a series of in-depth discussions with a wide cross-section of Albertans. Their message has been heard, and their suggestions have been incorporated into the very fabric of our organization. Our commitment to continued improvement will be achieved as these recommendations are implemented in the future.

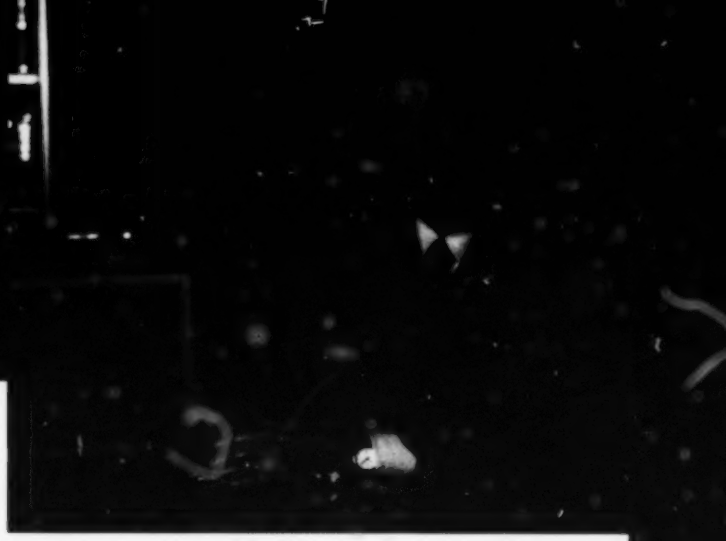
- During Alberta's steady transition from producing conventional oil and gas to producing more nonconventional resources, such as the oil sands and massive heavy oil projects, the EUB must ensure that conventional operations continue to operate appropriately without compromising the public interest. One of the ways we will achieve that goal is through the Licensee Liability Rating program, which rates the assets and liabilities of each oil and gas company and requires payment from those whose liabilities outweigh their assets. Another is ensuring that we effectively transfer staff expertise from conventional to nonconventional operations as this transition continues.

- In addition to our ongoing responsibility to ensure that rates charged by the companies we regulate are fair and reasonable, we are developing a foundation for the regulation of municipal utility companies in 2003 as part of the continued restructuring of Alberta's electricity and natural gas markets. We are also preparing to take on governance of the Market Surveillance Administrator, which was formerly handled by the Power Pool of Alberta.

- We must provide a workplace that allows us to keep our staff and attract others to join our team as required. Good people have always been the greatest strength of the EUB. To ensure that we keep our most important asset in place during these challenging times and in the future, we are determined to provide and maintain a fair and competitive compensation structure and benefits package for our employees.

I wish to thank the public of Alberta and the companies and businesses that we regulate for their continued cooperation and assistance in a time of record activity. Most of all, I salute our dedicated staff, who continue to excel at all aspects of regulation.

MESSAGE FROM THE CHIEF OPERATING OFFICER



Earle Shirley, Chief Operating Officer

The EUB works for all Albertans by ensuring that the discovery, development, and delivery of our resources take place in a manner that is fair, responsible, and in the public interest. Today, we regulate over 1500 oil and gas companies operating over 110 000 operating wells, over 700 gas plants, about 317 000 kilometres of pipelines, and over 16 500 other oil field facilities. In the utilities sector, we regulate approximately 20 000 kilometres of electric transmission wires and service areas with over 155 000 kilometres of distribution line. We regulate coal mines, oil sands projects, and regulated utility rates, including the Gas Cost Recovery Rate, and the wholesale price of milk.

How do we do all of this? The answer is simple: the EUB is made up of highly skilled and dedicated people who are the driving force behind our continued commitment to Albertans. Faced with increased activity in the industries we regulate, EUB staff work diligently to ensure that energy development takes place in an environmentally sound and safe manner.

In pursuit of these aims, the EUB has been able to attract and retain top quality people, who continually demonstrate the highest professional and technical standards, coupled with an unqualified commitment to public service.

EUB staff are dedicated to the communities where they live and work, be they urban, rural, or aboriginal communities. This includes a strong commitment to communicate and consult with all our stakeholders.

In 2002, we held open houses in Pincher Creek, Bonnyville, and Medicine Hat to provide information on EUB processes and policies. We participated in the Making Synergy Real Conference held in Red Deer in February 2002, which brought stakeholders together to share experiences and learn from synergy group participants throughout the province. Our staff regularly participate in community stakeholder group meetings, facilitate landowner/industry disputes at the field level, and engage appropriate dispute resolution mediators to help arrive at solutions.

The EUB's annual Chairman's Award of Distinction is awarded to an EUB staff member in recognition of outstanding contribution to regulatory excellence. Our latest recipient is Laurie Wilson-Temple, of the Applications Branch, while in 2002 the award went to Marilyn Craig, of the Public Safety and Sour Gas Implementation Team, and Wade Vienneau, of the Utilities Branch. Previous recipients were Ron Paulson and the late Frank Mink. These people, nominated by their fellow workers, truly exemplify all of the qualities that make the EUB staff a strong and positive force in the province of Alberta.

Much work remains to be done to assure the safety of the industries we regulate and the Albertans we serve. We are confident that the outstanding performance of EUB staff will help us to meet the challenges of future demands.

ABOUT THE EUB

WHO WE ARE

The Alberta Energy and Utilities Board (EUB) is a provincial, quasi-judicial agency of the Alberta government that regulates Alberta's energy resources and utilities. Although the EUB makes decisions independently, our agency falls under the Alberta Minister of Energy. The EUB has approximately 750 staff in 14 locations across the province, with its main office in downtown Calgary.

WHAT WE DO

The EUB ensures that the discovery, development, and delivery of Alberta's resources take place in a manner that is fair, responsible, and in the public interest. The EUB has two core functions: 1) adjudication and regulation and 2) information and knowledge.

CUSTOMER SERVICE

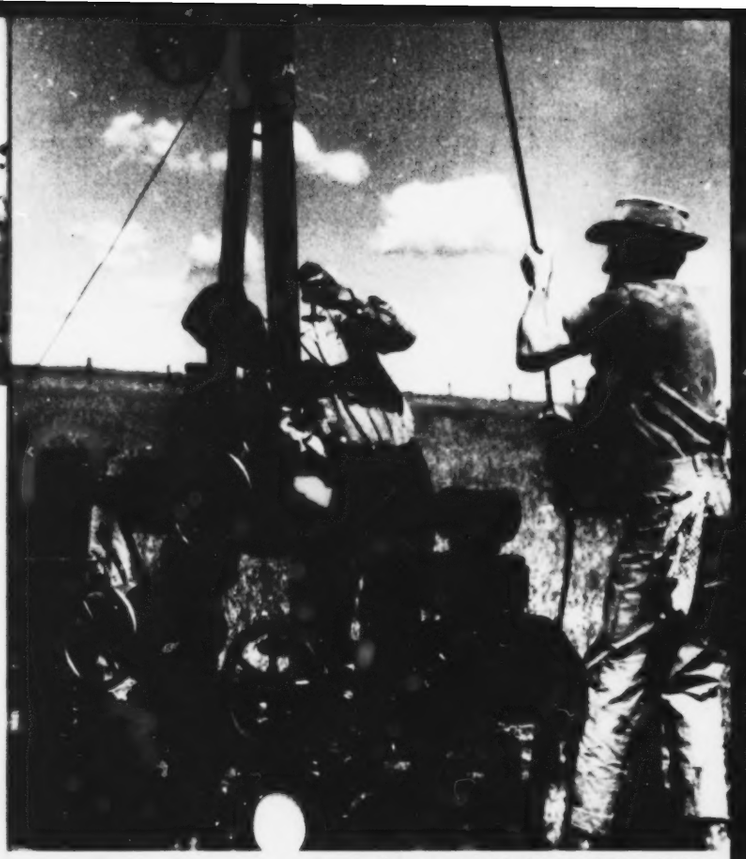
1) For the energy and utilities industries, the EUB provides
   - a stable and competent regulatory environment;
   - comprehensive requirements developed in consultation with stakeholders, consistently applied and enforced;
   - streamlined application review processes;
   - conflict resolution among industry players (e.g., through Appropriate Dispute Resolution, hearings, and inquiries);
   - resource conservation enforced by efficient production requirements;
   - a level playing field, with industry accountability for meeting operational requirements;
   - accessible and up-to-date energy information; and
   - coordination with other government depart ments for project approvals.

2) The public can rely on the EUB for
   - public safety and environmental protection regarding energy development;
   - responsiveness to public and consumer complaints for both utilities services and energy development;
   - facilitation of public concerns about oil and gas development;
   - the right to be heard, especially for directly affected landowners and communities;
   - monitoring of energy industry operations and public consultation guidelines;
   - safe and efficient utilities service at rates that are fair and reasonable;
   - orderly development and conservation through efficient production and waste prevention; and
   - publicly accessible information.

3) The EUB works closely with other government departments and agencies at all levels to
   - ensure that matters of mutual concern are addressed and coordinated to avoid duplication, and
   - provide information, advice, and recommendations.

REGULATORY HIGHLIGHTS

An overview of the EUB's activities in 2002, including important regulatory trends and initiatives



Photos courtesy of the Provincial Archive of Alberta

WHO KNEW IT ALL STARTED WITH THE THIRD MERIDIAN?

No one pays much attention to the third meridian these days—after all, it's just an imaginary line that runs down the middle of Saskatchewan from north to south. But in October 1887 it became the dividing line that set the stage for Alberta to become a very prosperous province a few decades later.

On October 31, 1887, the Canadian federal government issued a policy that forever changed the fate of Alberta—a province that wouldn't even come into existence until 1905. That policy proclaimed that only *surface rights* would be surrendered for lands west of the third meridian and that the Crown would keep all *mineral rights*. Mineral development, including coal, natural gas, and oil, would be administered from Ottawa by the Department of the Interior.

At that time, the lands west of the third meridian were only lightly populated, mainly by First Nations, Metis, and recent immigrants trying to build an agricultural economy. Most of these people who crossed freely back and forth over the equally invented, but far more tangible, 49th parallel between Canada and the U.S.A. were completely unaware of the new, fundamental difference between land development in the two countries. While the Crown would now keep mineral rights in Canada, in the U.S.A. the surface owner usually owned the subsurface mineral rights as well.

Fast forward to 1930: Alberta has been a province for only 25 years and, like its small population, is struggling to secure its future within Canadian confederation. Natural gas has already been discovered and developed, with the urban populations of Medicine Hat, Calgary, and Edmonton all enjoying the benefits of heating, cooking, and lighting using natural gas.

At the same time, Alberta's Premier John Edward Brownlee is finding that Alberta's oil and gas industry is difficult to deal with. The resource itself is regulated from Ottawa, there are huge natural gas flares in the Turner Valley region, and—to make matters worse—the Great Depression is well under way.

Brownlee's government responded by negotiating with Ottawa for control of the province's natural resource base. On October 1, 1930, the Natural Resources Transfer Agreement allowed control of Crown lands and resources to pass to Alberta from the federal government. The next day, Brownlee announced the newly created Alberta Department of Lands and Mines, with responsibility for some 150 million acres of lands.

Eight years later, the Oil and Gas Conservation Act was presented to the Alberta Legislature in the spring of 1938. The central feature of the act was the creation of the Petroleum and Natural Gas Conservation Board.

Over the years, this organization's name changed several times: to the Oil and Gas Conservation Board in 1957, to the Energy Resources Conservation Board (ERCB) in 1971, with an increased mandate to include coal, pipelines, and electric installations, and then to the Alberta Energy and Utilities Board (EUB) in 1995, when the ERCB amalgamated with the Public Utilities Board (PUB). It must be noted the PUB also has a long and distinguished record, being originally established in 1915; however, it is oil and gas that has most greatly influenced the economy and hence the prosperity of Albertans. In 1996, the Alberta Geological Survey joined the EUB and brought a focus on geoscience needed for earth resources stewardship and sustainable development.

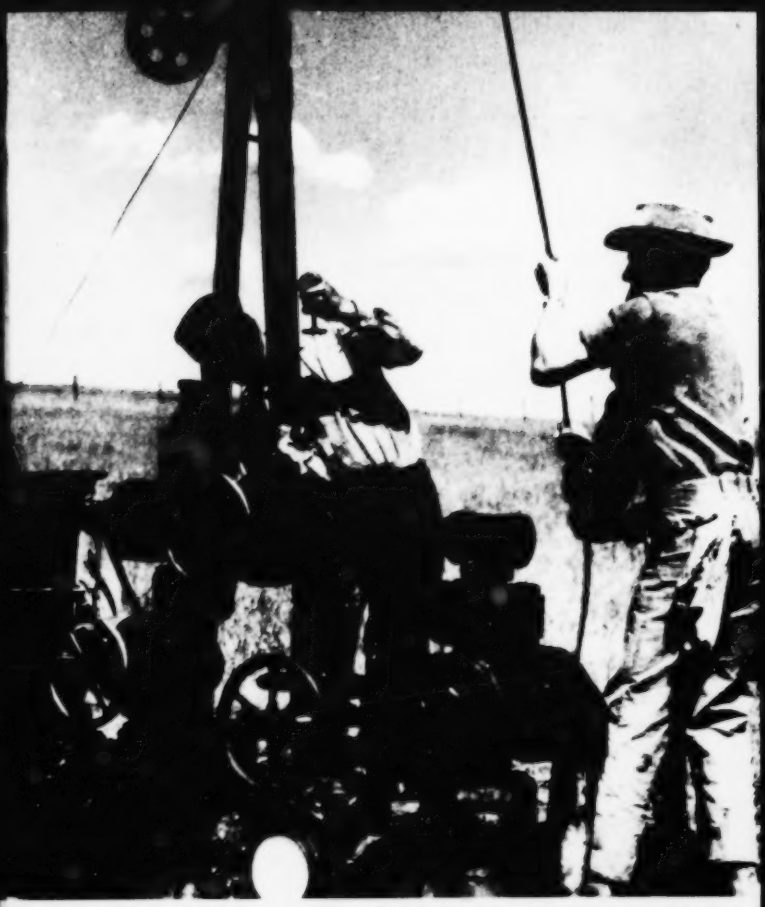
Today, Alberta—the *province* of Alberta—is the second largest natural gas exporter in the world. Only Russia exports more natural gas, and Alberta stands significantly ahead of such global gas exporting nations as Algeria, Norway, Indonesia, and Malaysia.

The province is also the 14th largest oil producer in the world—ahead of such well-known oil-producing nations as Libya, Algeria, and Brazil.

Along the road to achieving this global position, a myth was formed that is best expressed by author and historian David Breen in his 1993 book *Alberta's Petroleum Industry* and the Conservation Board, in which he states:

"Despite the imagery of hard-driving entrepreneurs and free-enterprise politics which characterize the oil industry in the public mind, the industry in reality has functioned within the tight confines of a regulatory structure unmatched in any other resource sector."

That unmatched regulatory structure continues today at the EUB, arguably one of the world's best regulatory agencies.



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FOLLOWING THROUGH: ACCOUNTABLE TO ALBERTANS

Some things in life are certain—death and taxes, for example. Other things are also certain: 1) oil and gas cannot be produced without some environmental impact, and 2) all things come to an end. At the end, the challenge lies in selecting a course of action with a positive outcome rather than relying on fate or luck. In Alberta, the end of life for thousands of oil and gas facilities is now occurring, and the reality is that many of these facilities carry environmental liabilities. A new EUB program is ensuring that the environmental liabilities of these aging and resource-depleted wells, pipelines, and facilities will be dealt with, and at no cost to Alberta taxpayers.

This program goes by the rather straightforward name Licensee Liability Rating. It is coupled with yet another exceptional program that handles "orphaned" wells, pipelines, and facilities. Both are designed to ensure that responsible, financially viable companies properly abandon, decontaminate, and reclaim oil and gas sites within Alberta. The EUB is strongly supported in these programs by the petroleum industry and other government agencies. Preventing future environmental liabilities and cleaning up current liabilities are priorities for the EUB, the energy industry, and the government of Alberta—and neither fate nor luck will play a role.

ALL HELL FOR A BASEMENT—IN 1907

That's not how things started, however. Natural gas was first found in Alberta by pure luck in 1883, when a Canadian Pacific Railway crew accidentally found natural gas while drilling a water well at a rail siding near Medicine Hat. By 1890, folks in the village of Medicine Hat had begun deliberately drilling for natural gas to use for residential heating, cooking, and lighting, leading British author Rudyard Kipling to describe the town as having "all Hell for a basement," when he visited in 1907.

By 1912, Calgary was the end-point of a 270 kilometre long gas pipeline from Bow Island, and the citizens of Edmonton began using natural gas in 1923 from a 130 kilometre pipeline originating in Viking. Obviously, there were numerous wells and pipelines operating in Alberta well before the federal government surrendered control over lands and natural resources to the province via the 1930 Natural Resources Transfer Agreement.

Today, more than 225 000 wells have been drilled in Alberta, along with approximately 317 000 kilometres of pipeline and thousands of batteries, tank farms, satellites, gas plants, and other facilities. Every year, some of those wells, pipelines, and facilities come to the end of their operating lives. What remains to be done is to ensure that all these are properly abandoned and that, if need be, the land they are located on is properly decontaminated and reclaimed for future generations. The term "abandoned" does not mean deserted or left derelict—rather, it means properly dismantled or disposed of using various technical methods.

A TOUGH AND FORCEFUL PROGRAM SUPPORTING "ORPHANS"

Alberta has a tough and forceful agenda in place to see that all these wells, pipelines, and facilities are in fact abandoned, decontaminated, and reclaimed—all at zero cost to the taxpayer.

This Orphan Program is supported by both government legislation and wide petroleum industry cooperation and is administered by the EUB via a number of

different regulatory tools and techniques. The heart of the initiative is a belief, supported with regulations, that the petroleum industry will pay for the abandonment and cleanup of what are referred to as "orphan" sites—an orphan being a well, pipeline, or facility that has no existing or traceable financially viable owner.

That there are many such sites in existence should come as no surprise, considering the fact that hundreds of wells and associated pipelines were in existence for decades prior to the formation of the Petroleum and Natural Gas Conservation Board, which came into existence in 1938 as the predecessor to today's EUB.

It should be equally unsurprising that a great many petroleum companies have come and gone over the past decades and that not all newer companies will succeed. Over the past eight years more than 660 new companies have registered with the EUB as first-time licensees. Way back in 1970, the EUB only dealt with 70 active companies in Alberta; today the EUB deals with more than 1000 companies.

Under the terms of the Orphan Program, both industry and the EUB have obligations. Industry has agreed to cover the significant costs associated with looking after orphans, while the EUB works diligently to prevent as many orphans as possible from coming into existence.

To prevent orphans, both industry and the EUB strongly encourage the appropriate management of liabilities. This provides a level playing field for industry, so that responsible companies do not bear the liability costs of noncompliant companies. For the EUB as provincial regulator, this means holding well, pipeline, and facility owners accountable—easily said, but difficult to achieve. The main tool used to do this is the suitably named Licensee Liability Rating program, designed to identify companies whose "deemed liabilities" are greater than their "deemed assets." When liabilities exceed assets, a deposit is required from the company to cover the estimated difference.

In May 2002, the EUB evaluated 1402 licensees within Alberta for deposit requirements, with 756 licensees sent invoices for varying required deposit amounts ranging from $3300 to several million dollars. By the end of December 2002, only eight producing licensees having reclamation liabilities were involved in enforcement action with the EUB's Corporate Compliance Group for not paying their deposit amounts. This speaks strongly to industry's commitment to managing its environmental liability and is a credit to the Alberta petroleum industry.

It is important to note that when a company's assets exceed its liabilities or when a company sells a property or properly abandons and reclaims a property, the deposit amount is refunded by the EUB.

The EUB, in agreement with the energy industry and the government of Alberta, works diligently to hold companies accountable for the end-of-life liabilities associated with oil and gas sites. By implementing an industry-supported but firm, reasoned approach to preventive programs, coupled with ongoing enforcement actions as a last resort, the EUB ensures a level playing field for the energy industry. This protects taxpayers from the costs associated with abandonment, decontamination, and reclamation of these sites.

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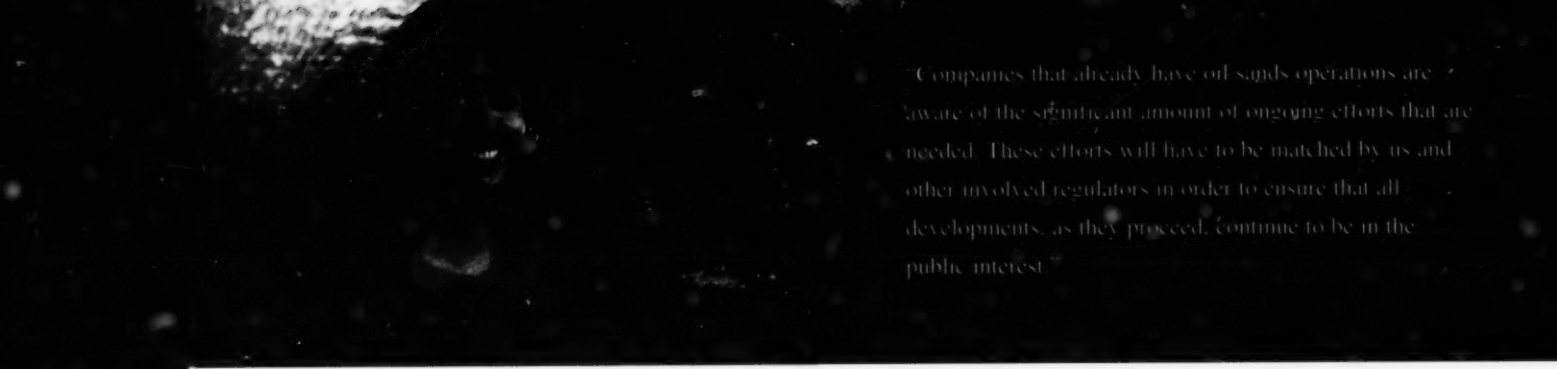

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Andrea Larson, Senior Engineer, Applications Branch

ALBERTA'S OIL SANDS: THE MOMENTUM CONTINUES

A decade ago, less than 10 per cent of Alberta's annual oil production came from the oil sands areas. In 2001, raw bitumen production surpassed conventional crude oil production for the first time, and the gap widened in 2002. Looking to the future, we expect this trend to be maintained, with oil sands contributing ever-larger amounts to Alberta's oil production profile. Such a clear and dramatic impact on Alberta's resource production base in only 10 years is unprecedented.

In 2002, bitumen production from both Alberta's surface mining and in situ oil sands developments totalled about 48 million cubic metres, or 300 million barrels. Impressive as that number may be, what is most significant is the reserve estimates that underpin all oil sands developments as long-term suppliers of energy. Alberta has the largest bitumen reserves in the world, totalling about 27 720 million cubic metres, or 174 billion barrels. This amount of bitumen is recoverable under current technologies and rivals the reserves of the world's biggest oil producer, Saudi Arabia.

The economically viable production of Alberta's oil sands resources has always presented challenges to potential developers. The deposits of bitumen—the thick, molasses-like oil contained in the spaces between oil sand grains—found near the ground's surface must be rigorously treated for conversion into an upgraded, usable form. Compared to conventional crude oil, bitumen requires dilution with lighter hydrocarbons to make it transportable by pipeline; it also requires additional upgrading before it can be refined. The challenge for bitumen deposits found deeper underground is to overcome its viscosity, or thickness, to lift it to the surface. That these challenges have been so successfully addressed over time has surprised even its most ardent supporters.

A TALE OF TWO PROJECTS

In 1999 Andrea Larson, an EUB senior engineer, was involved with the proposed Shell Muskeg River Mine (now operated under Albian Sands), a development that included a truck-and-shovel mining operation, bitumen extraction and treatment plants, and related supporting facilities to be located about 70 kilometres north of Fort McMurray. More recently, in 2002, Andrea was involved with TrueNorth Energy Corporation's application for an oil sands mine and bitumen extraction facility called the Fort Hills Oil Sands Project. This proposed development was to be located about 90 kilometres north of Fort McMurray and include a truck-and-shovel mine, two bitumen-processing trains, and associated infrastructure.

Although both projects were approved subject to a number of environmental and other conditions specific to each project, the Muskeg River Facility is very early in its development, while the Fort Hills project has, at the time of this writing, been put on hold by TrueNorth.

"Despite the successes of the past, the challenges remain," observes Andrea. "Much work needs to be done, and not just from newer applicants seeking potential approvals, but also from existing operators in the oil sands areas to ensure compliance with previous decisions and agreements."

OIL SANDS AWARENESS GROWING

In early 2003, Alberta's Minister of Energy attended meetings cohosted by the Pacific NorthWest Economic Region group, whose focus was "The Connection of Energy Supply in the Province of Alberta to Energy Markets in the Pacific NorthWest." The Minister was quoted as saying, "We want to inform decision makers in this important economic region of the huge nonconventional oil reserves in the oil sands."

However, notwithstanding the successes and potential of the oil sands, significant challenges lie ahead for its ultimate development. These very large projects require a great deal more investment than do conventional resource developments, with parallel efforts to properly manage the significant environmental impacts of associated infrastructure, large energy and material requirements, and potential environmental disturbances.

In spite of these obstacles, "Oil sands companies have shown a lot of perseverance over the years...and these efforts have shown positive results," says Andrea. More companies have announced their intentions to become part of the oil sands industry, while production from the oil sands has served to offset some of the declines in Alberta's conventional sources, allowing Alberta to continue to be a significant oil supplier for Canada and other parts of North America.

"Companies that already have oil sands operations are aware of the significant amount of ongoing efforts that are needed. These efforts will have to be matched by us and other involved regulators in order to ensure that all developments, as they proceed, continue to be in the public interest."

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In 2002, bitumen production from both Alberta's surface mining and in situ oil sands developments totalled about 48 million cubic metres, or 300 million barrels. Impressive as that number may be, what is most significant is the reserve estimates that underpin all oil sands developments as long-term suppliers of energy. Alberta has the largest bitumen reserves in the world, totalling about 27 720 million cubic metres, or 174 billion barrels. This amount of bitumen is recoverable under current technologies and rivals the reserves of the world's biggest oil producer, Saudi Arabia.

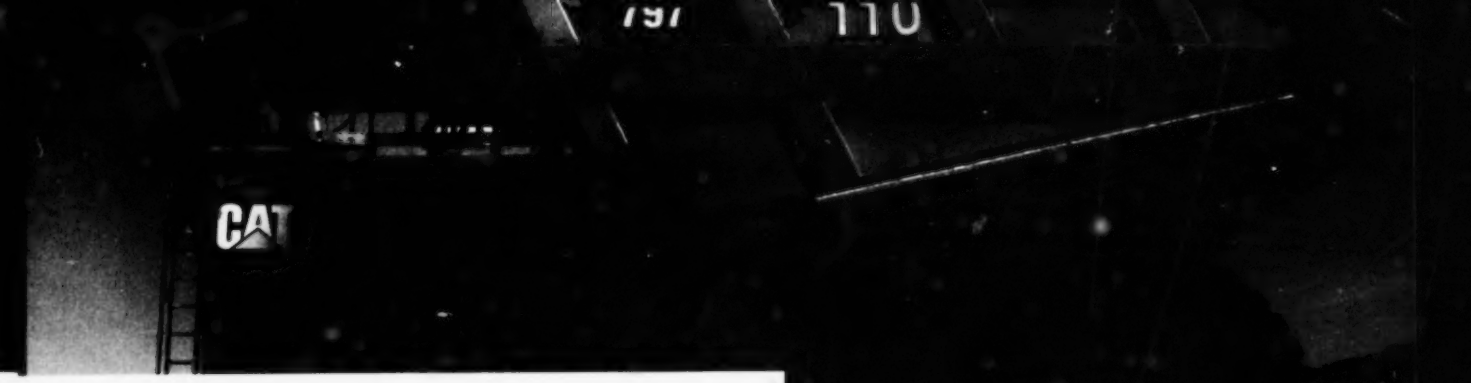
The economically viable production of Alberta's oil sands resources has always presented challenges to potential developers. The deposits of bitumen—the thick, molasses-like oil contained in the spaces between oil sand grains—found near the ground's surface must be rigorously treated for conversion into an upgraded, usable form. Compared to conventional crude oil, bitumen requires dilution with lighter hydrocarbons to make it transportable by pipeline; it also requires additional upgrading before it can be refined. The challenge for bitumen deposits found deeper underground is to overcome its viscosity, or thickness, to lift it to the surface. That these challenges have been so successfully addressed over time has surprised even its most ardent supporters.

A TALE OF TWO PROJECTS

In 1999 Andrea Larson, an EUB senior engineer, was involved with the proposed Shell Muskeg River Mine (now operated under Albian Sands), a development that included a truck-and-shovel mining operation, bitumen extraction and treatment plants, and related supporting facilities to be located about 70 kilometres north of Fort McMurray. More recently, in 2002, Andrea was involved with TrueNorth Energy Corporation's application for an oil sands mine and bitumen extraction facility called the Fort Hills Oil Sands Project. This proposed development was to be located about 90 kilometres north of Fort McMurray and include a truck-and-shovel mine, two bitumen-processing trains, and associated infrastructure.

Although both projects were approved subject to a number of environmental and other conditions specific to each project, the Muskeg River Facility is very early in its development, while the Fort Hills project has, at the time of this writing, been put on hold by TrueNorth.

"Despite the successes of the past, the challenges remain," observes Andrea. "Much work needs to be done, and not just from newer applicants seeking potential approvals, but also from existing operators in the oil sands areas to ensure compliance with previous decisions and agreements."



OIL SANDS AWARENESS GROWING

In early 2003, Alberta's Minister of Energy attended meetings cohosted by the Pacific NorthWest Economic Region group, whose focus was "The Connection of Energy Supply in the Province of Alberta to Energy Markets in the Pacific NorthWest." The Minister was quoted as saying, "We want to inform decision makers in this important economic region of the huge nonconventional oil reserves in the oil sands."

However, notwithstanding the successes and potential of the oil sands, significant challenges lie ahead for its ultimate development. These very large projects require a great deal more investment than do conventional resource developments, with parallel efforts to properly manage the significant environmental impacts of associated infrastructure, large energy and material requirements, and potential environmental disturbances.

In spite of these obstacles, "Oil sands companies have shown a lot of perseverance over the years...and these efforts have shown positive results," says Andrea. More companies have announced their intentions to become part of the oil sands industry, while production from the oil sands has served to offset some of the declines in Alberta's conventional sources, allowing Alberta to continue to be a significant oil supplier for Canada and other parts of North America.

OIL SANDS FACTS

Oil sands are a mixture of sand, clay, water, and bitumen. Bitumen is thick, heavy oil with the consistency of molasses and is contained in the spaces between sand grains. Bitumen is also found in deeper carbonate rock. Technically, bitumen is petroleum hydrocarbons with a density greater than 960 kilograms per cubic metre; light crude oil, by comparison, has a density as low as 793 kilograms per cubic metre.

Near-surface deposits are mineable with huge truck-and-shovel operations. In situ recovery is used for bitumen deposits buried too deep – more than 75 metres – for mining to be practical. Most in situ bitumen and heavy oil production comes from deposits buried more than 400 metres below the surface of the earth.

Deeper oil sands deposits are recoverable by in situ methods that facilitate the flow of bitumen towards wells in order to be pumped to the surface. Cyclic steam stimulation (CSS) and steam-assisted gravity drainage (SAGD) are examples of in situ recovery methods that inject steam underground to soften bitumen, allowing it to flow or be pumped to the surface.

Alberta's oil sands exist in three main areas: the Peace River, Athabasca, and Cold Lake. In total, these areas cover about 140 000 square kilometres, with surface mining confined to sections just north of Fort McMurray.

ENVIRONMENTAL PARTNERSHIPS: A PATH TOWARDS A BETTER TOMORROW

Marcus Aurelius, philosopher and Roman Emperor in the second century AD, said, "That which is not good for the bee-hive, cannot be good for the bees." These words reflect a clear awareness of the relationship between living things and their environment. And as Emperor of Rome, the author likely also had significant abilities to directly influence his society's environmental impacts that may have resulted from their industries, road systems, agriculture, or other enterprises.

In today's world, managing the environmental impacts of intensive energy development is a challenge many industries and jurisdictions are grappling with on an ongoing basis. Newer energy projects are often larger, with a greater scope of impacts and considerations. And attempting to feed the appetite of an energy-hungry world while at the same time limiting any damage to the "beehive" in which we live is clearly beyond the abilities of any one leader, no matter how powerful. So what can we do?

TOWARDS COMMON SOLUTIONS

One answer is to embark upon "environmental partnerships." Water, air, and other essential elements of life on earth have their own patterns and environmental cycles around the globe. These pathways ignore political boundaries and reinforce the need for collective actions. Environmental partnerships are the coming together of different groups to find common solutions for environmental issues. They are not new. The U.S.A. and Canada have one of the world's oldest and most effective environmental partnerships, with more than 30 government agreements between the two countries. This relationship dates back to 1909, with the signing of the Boundary Waters Treaty. Other milestones include the 1972 Great Lakes Water Quality Agreement, signed to clean up the Great Lakes, and the 1991 Air Quality Agreement, signed to reduce the air emissions that cause acid rain.

Here in Alberta, current legislation designates that Alberta Environment is responsible for establishing Alberta's air, land, and water quality standards and guidelines. Within the resource development sector, the EUB is responsible for ensuring that Alberta's energy industries, through their operational practices, meet these environmental standards. However, regardless of the current legislative framework of any given region, many environmental partnerships are not merely based on current circumstances of the law, but rather on the need for more innovative and responsive actions from industry and regulators alike and for solutions that can address the needs of different stakeholders.

Two recent Alberta examples of these environmental partnerships are the Clean Air Strategic Alliance (CASA) and the Cumulative Environmental Management Association (CEMA).

CASA is a nonprofit association composed of diverse stakeholders from government, industry, and nongovernment organizations (such as health and environment groups). Senior representatives from each of the three sectors are committed to developing and applying a comprehensive air quality management system for the people of Alberta through a consensus-based process.

Turning to Alberta's oil sands, environmental impacts associated with these large developments are an ongoing concern that the EUB and other regulators

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must deal with. In response to these challenges, CEMA was created, bringing together many regional stakeholders. CEMA's goal is to create an effective process for managing cumulative environmental effects in the oil sands region. CEMA is working to define environmental capacities by reviewing all existing data, research, and traditional knowledge and making recommendations for further monitoring or research if required.

Both CASA and CEMA were born within the last decade in response to concerns raised about the environment and energy developments. The EUB supports these environmental partnerships, as we believe they represent the kind of commitment and long-term planning necessary for the health of our environment. The EUB's support of CASA and CEMA is not just in word, but in deed, as a number of EUB staff members have been assigned to work with both organizations from their very beginnings.

DIPLOMACY, DIALOGUE, AND CONSENSUS

Environmental partnerships is a concept that has its roots in diplomacy, dialogue, and consensus. "For these types of partnerships to have a chance of success, there needs to be a sincere willingness on the part of all partners to understand the interests of others and to commit to the process and to each other," says Kim Eastlick, an EUB senior engineer. Kim knows firsthand about conflicts that sometimes arise at these partnerships through experience. He's a past cochair of CASA's Flaring and Venting Project team and currently serves as cochair of CEMA's NO_X/SO_2 Management Working Group. Kim also serves as the EUB representative on CEMA's Trace Metals and Air Contaminants working group.

CASA's experience in its environmental partnerships and its resulting track record of achieving progress by measurable objectives have been unqualified successes, and the EUB has been a contributing partner towards these accomplishments. In April 2002, the EUB was invited by the World Bank to speak before its Global Gas Flaring Reduction Conference in Oslo, Norway. A paper on the conference cites the success the EUB, CASA, and Albertans have enjoyed as a result of the inclusive multistakeholder approach taken by the EUB to solution gas flaring reduction, along with the cooperation shown by industry.

Since CEMA has only been in existence for the last several years, it is still relatively early to attribute similar successes to it and its associated environmental partnerships. Nevertheless, CASA and other successful partnerships have provided positive examples to build from in this increasingly important approach to dealing with environmental challenges of all types. These challenges are often extremely complex and require persistence to successfully address.

"It sometimes is difficult," concedes Kim. "But the frank discussions and diversity of views are things that just come with the territory. Sometimes these very differences can be used to provide opportunities for creative solutions that meet the needs of participants. If history is any judge, the efforts made today will be more than paid back by consensus-based solutions that all stakeholders are committed to put into action."

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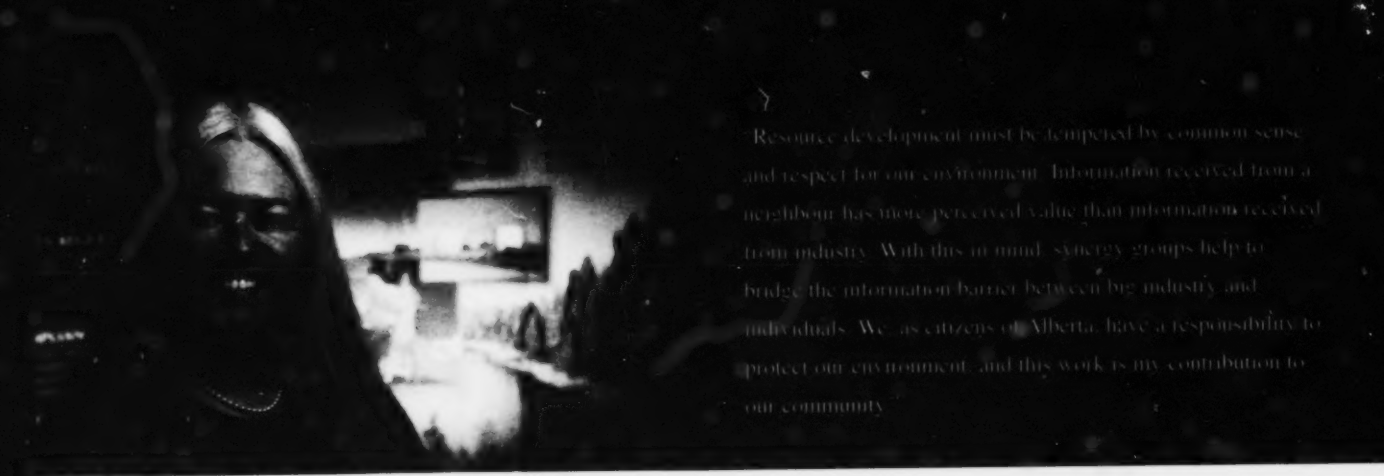
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A provincial conference for synergy groups kicked off a year that saw the EUB renew and expand its commitment to mutual learning with communities, youth, and industry. The conference was complemented by open houses, youth education projects, participation in community meetings, initiation of relationships with aboriginal communities, and extensive staff training in cross-cultural communication. In this way, the EUB strove to balance the interests of its diverse stakeholders.

MAKING SYNERGY REAL

What happens if 250 people from communities, oil and gas companies, and the EUB come together for two days to talk about energy development challenges in their local areas? Synergy happens!

Synergy groups are made up of the public, industry, and government representatives to collaboratively address local issues and improve communication.

In February 2002, the EUB, the Canadian Association of Petroleum Producers, and Alberta synergy groups joined forces and resources in Making Synergy Real. Twenty-eight multistakeholder groups of an estimated fifty active in the province met for the first time to share stories, tips, and best practices. Their focus was on the process of building relationships.

In plenary and breakout sessions, in hallway clusters, over coffee and meals, people connected with each other. Each breakout session began with a panel presentation of the three perspectives of community, industry, and the regulator. They shared experiences of starting up, structuring and organizing, decision-making, communicating, and resourcing. Whether groups had been in place for years or were just beginning, there was something for everyone to learn and take home. One community delegate summed it up this way: "This was a very good conference, good contacts and community mixing—it exceeded my expectations!"

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In addition to open houses, both field and Calgary staff attended community meetings and information sessions all over the province. Field staff have long been active participants in community-based working groups. This allows them not only to share information about the regulatory framework but also to learn how that framework plays out in local communities. This understanding enables the EUB to be more responsive to community concerns and information needs.

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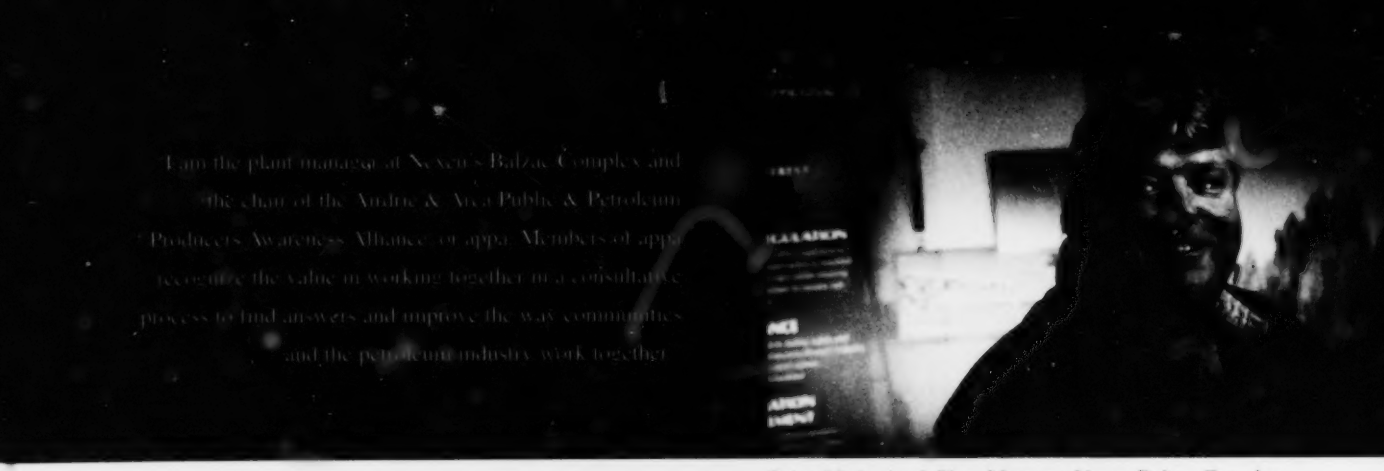
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To further prepare EUB staff to engage aboriginal communities, awareness sessions were held at the Nakoda Lodge, all eight Field Centres, the Field Training School, and the Calgary office.

Recognizing that youth are tomorrow's leaders, the EUB also assessed the need in three First Nations communities for a learning kit to complement the grade nine social studies curriculum. That kit is to be developed over the coming year in association with elders, educators, and EUB staff.

The need to foster relationships and improve communications among all stakeholders in energy development will never be fully satisfied. The EUB, through these initiatives and in its daily interactions with the public, industry, and government bodies, demonstrates its ongoing commitment to relationships based on understanding, integrity, and transparency. In this way, the EUB continues to build a regulatory framework that inspires the confidence of all Albertans.

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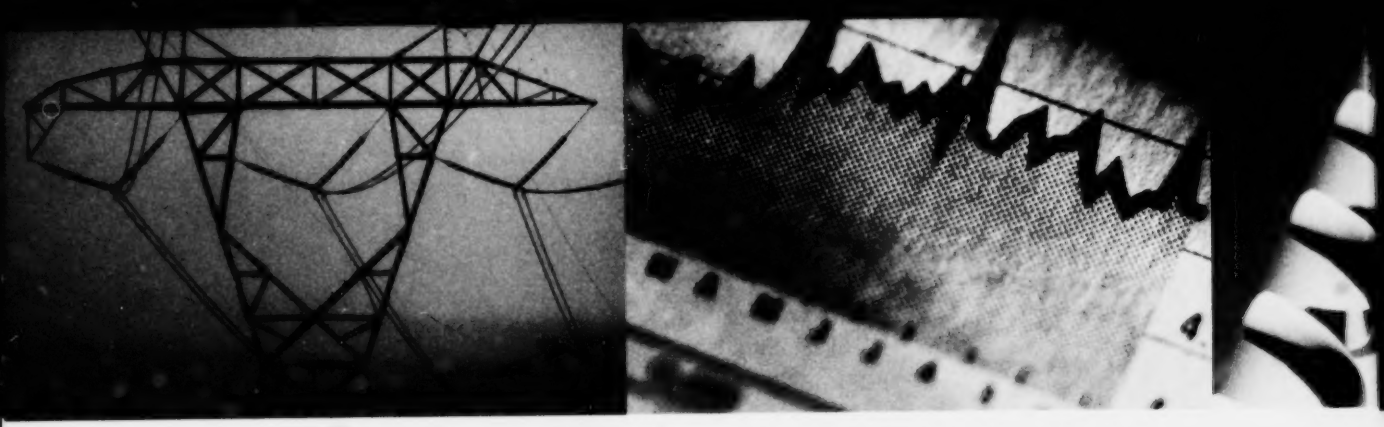


A YEAR OF CHANGE IN UTILITIES

The EUB was kept very busy with Utilities Branch matters in 2002. Aside from the typical issues that arise with natural gas and electricity prices, we also set forth some key policies that will shape the way utilities run their businesses for many years to come.

The EUB's role is changing in Alberta's restructured utility industry. While the Board continues to regulate delivery of utility services to ensure that customers receive safe and reliable service at just and reasonable rates, it now also looks at the need to facilitate competition. Among other steps taken toward this end, the EUB is trying to provide customers with clear market signals with respect to commodity pricing.

INTRODUCING MONTHLY FLOW-THROUGH COMMODITY PRICES

In late 2001, the EUB released *Decision 2001-75*, which looked at the way natural gas prices were set and approved a monthly Gas Cost Recovery Rate (GCRR) to be implemented in 2002. Previously, gas rates were approved twice a year. Under the new system, the GCRR is set every month.

In 2002, the EUB also approved a monthly energy price system for ATCO Electric in 2003. The new monthly Regulated Rate Option energy charge will be based on pool prices and should promote better price transparency for customers.

Both of these measures were designed to increase competition and ultimately lead to lower commodity prices. "One of the keys to promoting competition in Alberta is removing the barriers to competition that existed in the fully regulated market," says Bob Heggie, Executive Manager of the EUB's Utilities Branch.

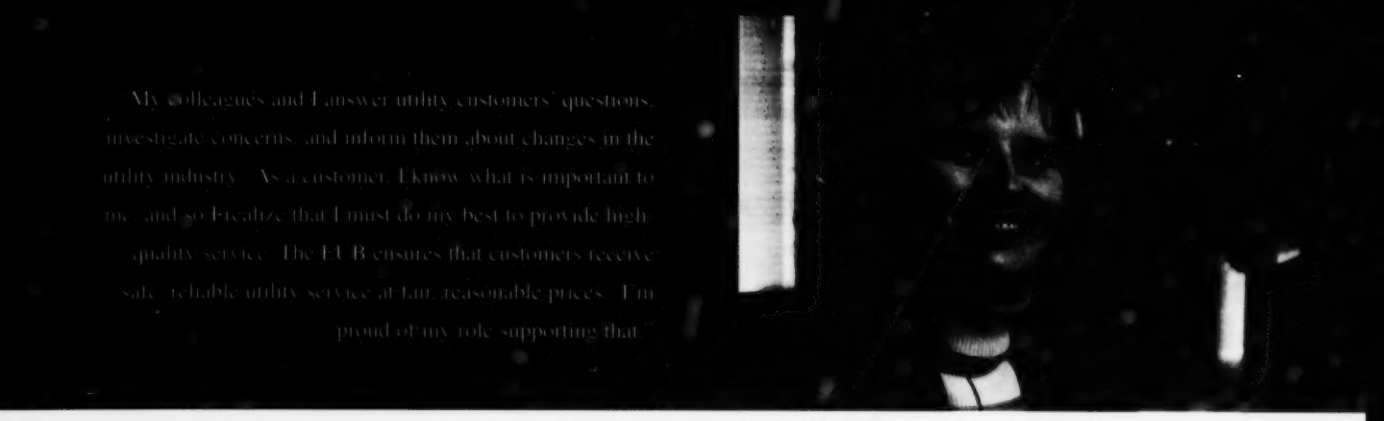
"Going to monthly gas and electricity charges means the price on customers' bills will be much closer to prices they see every day on wholesale markets. This should allow customers to make better choices when considering a retail service provider."

AFFILIATE TRANSACTIONS—PUTTING RULES IN PLACE FOR UTILITY COMPANIES TO DO BUSINESS WITH OTHER COMPANIES THEY OWN

In *Decision 2002-069*, issued in July 2002, the EUB ruled on certain relationships and transactions between regulated and nonregulated affiliates within the ATCO Group of Companies. The decision dealt with issues including the transfer of assets, outsourcing arrangements, shared costs, and corporate costs.

One of the fundamental principles of this decision was that future asset transfers should occur at fair market value, provided customers are not harmed. On another issue, transfer pricing, the EUB determined that it would be dealt with more extensively in an upcoming decision related to the Code of Conduct. That decision is scheduled for release in the first half of 2003.

"It is critical that both the utility companies and the public clearly understand the rules that utilities operate under, as well as the impact these rules have on consumers and utilities," Bob says.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ENSURING QUALITY SERVICE

A key focus of the EUB is to ensure that customers are not harmed in the restructured utility industry. A number of steps were undertaken in 2002 to ensure that customers continue to receive safe and adequate service. One measure was to launch an initiative to establish standards for quality and reliability of service. Once fully implemented, utilities would be required to pay penalties for failure to meet the standards.

Further, the EUB conducted an audit of problem bills in the EPCOR/Aquila service area to determine root causes of the billing errors. Based on the results of the audit, the utilities will be committing to certain quality of service improvements.

In addition, the EUB implemented a new billing accuracy regulation in late 2002, requiring a utility to compensate its customers when bills inaccurately represented the amount of electricity used, also known as consumption. Specifically, EPCOR's Regulated Rate Option customers in the Aquila service area were eligible for compensation. The EUB assessed complaints from eligible customers and approved a $75 credit for those who had received bills that were not reasonably accurate.

The EUB also has a Customer Concerns centre, which investigates utilities service and billing disputes that customers are unable to resolve through their utility. This centre handled over 2500 complaints in 2002.

To reach our Customer Concerns line toll free, dial the RITE line at 310-0000, then dial 780-427-4903 and press zero or stay on the line for an operator. The Customer Concerns line is accessible by phone from Monday to Friday, 8:00 a.m. to 5:00 p.m.; by fax, at 780-427-6970; or by e-mail, at <Utilities.Concerns@gov.ab.ca>.

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ADR CONTINUES TO GAIN FOLLOWING: EUB FACILITATION, MEDIATION, HEARINGS PROCESSES TRUSTED

It began in January 2001 as a unique way of airing concerns and issues related to oil and natural gas development that followed years of preparation by the EUB, key stakeholders, and industry representatives.

Today, the EUB's Appropriate Dispute Resolution (ADR) program lays claim to a loyal following of land owners, resource industry personnel, and other stakeholders who put their trust in the skills and dedication of EUB staff and neutral third-party dispute resolution specialists.

The ADR process builds on an evolving EUB initiative to encourage more public and industry input that began in the mid-1980s. Albertans and industry continue to legitimately push for the right to speak out on issues directly affecting them.

Major benefits of the EUB's ADR program include improved landowner/industry relations that are of interest to all Albertans, better use of EUB and stakeholders' time, and more face-to-face discussions between affected landowners and operators. This has led to finding local solutions to local problems and enhancing efficiencies to meet stakeholders' needs.

If facilitation, mediation, or other ADR alternatives for an application only result in partial resolution or no resolution, then an EUB hearing is likely required.

"Those who have used the process continue to support the need to sit down and address differences face to face," says Bill Remmer, Chair of the ADR Standing Committee and the EUB's ADR Coordinator. "They have found EUB staff or mediators were able to facilitate the resolution process professionally and skillfully."

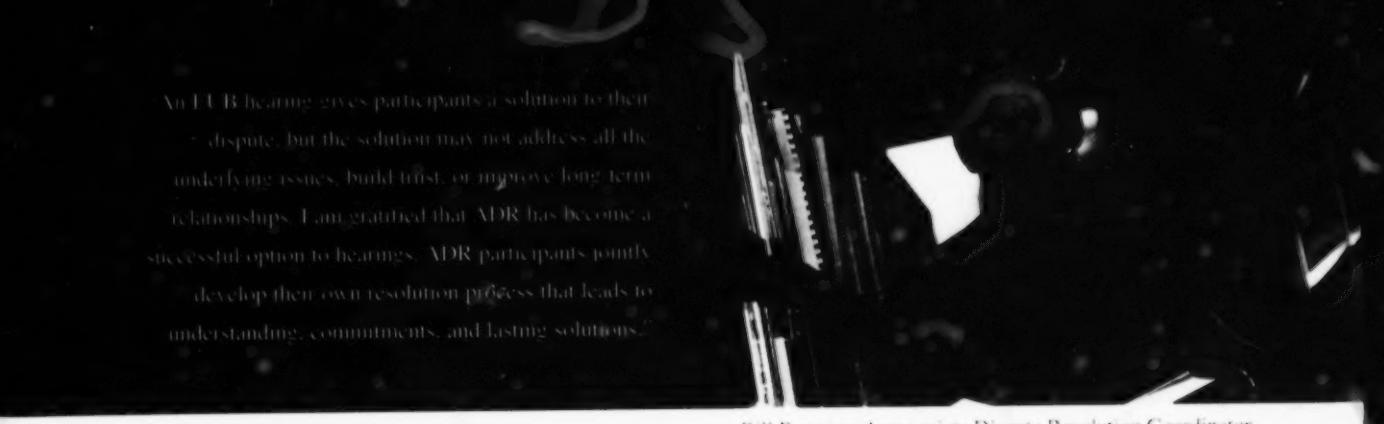
Feedback from participants indicates that 92 per cent of those who have used the ADR process would use it again.

While the EUB plays an extremely important role in field facilitation and mediation, it plays a smaller role in achieving actual agreement. That role resides with the parties in dispute, says Bob Garies, an ADR Standing Committee Member, President of Consultation & Compliance Inc. (a public consultation and regulatory facilitation company), and Chairman of the Canadian Association of Petroleum Landmen's Field Acquisition and Management Committee.

"I believe that credit must go to all three groups—the regulator, industry, and the affected parties—for embracing new ways of resolving disputes. The ADR process is meant as 'another tool in the toolbox' when negotiations break down," Bob added, noting that by comparison, of the 26 947 applications filed with the EUB in 2002, the ADR program was only needed in a little over 1 per cent of instances. "This implies that, for the most part, the system is working."

Concerned parties are able to choose the best way to settle a dispute. This can range from agreements made with no outside involvement to having EUB staff facilitate and, in more difficult or complex cases, having a third party act as independent mediator.

Of the 154 EUB staff facilitations completed in 2002, 129 were fully resolved—an 84 per cent success rate that can be directly attributed to the dedication and skill of EUB staff. In addition, there were 27 mediations completed, with 81 per cent fully resolved. Many hearings were avoided and nine hearings were actually cancelled as a result of these ADR efforts.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understanding, commitments, and lasting solutions.

Bill Remmer, Appropriate Dispute Resolution Coordinator

The EUB's ADR program continues to be a work in progress. Ground rules are established with the help of neutral third-party professionals at a Preliminary ADR (PADR) meeting prior to entering into a mediation session. Industry participants are usually responsible for the costs of the PADR meeting, including the direct third-party costs of landowners and the public. Costs, as well as payment for future ADR options, are discussed and agreed to at the preliminary meeting.

"When traditional negotiations break down, it's often difficult to avoid becoming adversarial or positional. The ultimate success with ADR initiatives rests with the parties' willingness to a take a different approach and to consider their dispute in a larger and longer-term framework. This often will reveal greater opportunities to make gains for all, and significantly shorten future time lines," says Dave Savage, Vice-President, Business Development, TriQuest Energy Corp., and a Small Explorers and Producers Association of Canada (SEPAC) and ADR Standing Committee member.

The ADR Standing Committee is constantly looking for ways to enhance the net benefits to all stakeholders. The EUB strongly encourages parties to attend a PADR meeting to ensure they have met face to face and have reached an informed decision on resolution options. Subsequent participation in mediation is voluntary and does not rule out access to an EUB hearing or in any other way affect the rights of parties involved. It should also be noted that decisions reached through the ADR process should not delay the EUB's decision to move to a hearing.

While the EUB's ADR program has previously focused on industry and surface landowner disputes, the EUB and a new industry taskforce is now also investigating how to improve company-versus-company conflict management. Endorsed by leading industry associations, the EUB, and Canada's National Energy Board (NEB), the taskforce identifies and helps solve situations that arise from not settling a dispute or issue properly. Operational delays, budget overruns, audit delays, and added legal and hearing expenses can all play a part in eroding project returns and compromising relationships.

Future solutions to these scenarios will always include enhancing awareness of the benefits associated with using open, early, constructive communication to identify and address disputes. With this in mind, future goals of the taskforce and the EUB will be to create and implement a user-friendly set of best practices based on ADR learnings.

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WORKING WITH TECHNOLOGY

Using technology to work collaboratively with stakeholders is a business priority at the EUB. By leveraging technology, we are able to streamline processes, realize more efficient information management, and help ensure that we are working for Albertans in the most proficient way possible. In 2002, this priority was reflected in the launch of the Field Surveillance Inspection System and the Petroleum Registry of Alberta. As well, the Integrated Applications Program began a new phase that included reaching out to consult with stakeholders.

FIELD SURVEILLANCE INSPECTION SYSTEM

Annually, the EUB receives up to 45 000 notifications from industry that well spuds (new well starts), flaring, venting, pipeline construction and testing, and other operations are taking place. These notifications were routinely submitted to the Field Centres by phone, fax, or e-mail and subsequently entered into numerous spreadsheets and databases. This process resulted in significant duplicate effort by industry and the EUB. Once entered into the EUB's systems, the information could be compiled and shared within the EUB and with the public when they called us about activities in their communities.

The new Field Surveillance Inspection System (FIS) allows industry to notify the EUB electronically of their activities. FIS Business Project Manager Bill Wylie explains, "The benefits of electronic reporting impact many people, including citizens of Alberta."

When Albertans see oil and gas activities in their communities, they often call the EUB to find out what is going on and to look for assurances that the activities are safe and controlled. Now that industry notifies the EUB of certain activities electronically, there is no need to wait for the data to be entered into databases. All Field Surveillance staff can immediately access the information through their computers and answer public inquires in a more responsive manner.

Because information is submitted electronically and no additional data entry is required, information accuracy is maintained. It also allows us to better manage inspections, as field staff use notifications to flag when an inspection is appropriate. Rig inspections may result from a well spud or re-entry notification; facility inspections may result from a new facility notification, incident, flaring, or venting notification; and pipeline inspections may result from new pipeline construction, pipeline test notification, or incident notification.

So how is the rollout of FIS going? Bill reports, "Our project team of 14 introduced FIS in September 2002, and by the end of 2002, 85 per cent of industry notifications were made electronically through the new system."

Notifications are Phase 1 of FIS. Phase 2 focuses on incidents, while all inspection work will operate under FIS in Phase 3.

PETROLEUM REGISTRY OF ALBERTA

The oil and gas industry reports an enormous amount of information to the EUB so that we can monitor production. Due to the teamwork of more than 40 staff, 2002 saw much of this reporting shift to a new Internet-based tool called the Petroleum Registry of Alberta. The Petroleum Registry streamlines and simplifies the reporting of oil and gas production from wells and provides a single, authoritative source of secure, valid, standardized, shareable, and timely petroleum infrastructure information.

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Wayne Gilbart, FIS Administrator, Field Surveillence Branch

"One of the important advantages of the Petroleum Registry is that it eliminates many opportunities for mistakes and gives immediate feedback when errors are spotted," says Eileen Dickson, the EUB's business leader for the Petroleum Registry. For example, data that used to be reported many times, sometimes by many different people and companies, are now reported only once. Then the Petroleum Registry automatically calculates statistics and fills in fields that require similar data.

In order to ensure a smooth transition to the Petroleum Registry in 2002, an information package, training modules, Web site, and help desk were created so that industry would realize the registry's full benefit.

The Petroleum Registry will save industry millions of dollars previously used to find and fix mistakes and pay resulting penalties. As well, more accurate reporting will lead to more accurate royalty payments to the province and, in some cases, better petroleum production practices.

INTEGRATED APPLICATIONS PROGRAM

An EUB team of 14 is currently developing and implementing the Integrated Applications Program (IAP), a multiyear project to provide stakeholders with an electronic business solution for many of their requirements. IAP Delivery Project Manager Susan Papp explains, "When IAP is fully implemented, stakeholders will be able to submit applications and related information, hearing submissions, and technical data electronically and then receive notification of the result of their applications."

The first component of IAP, called the Integrated Application Registry (IAR), was implemented in July 2001. IAR is an internal electronic application, submission, and objection registry that provides staff who process applications with the ability to track the status of an application from beginning to end. IAR also allows anyone with Internet access to review the status of most applications registered at the EUB.

For the current phase of IAP, stakeholder involvement is an important element. The Electronic Application Submission (EAS) Phase 1 will allow well licence applications under *Guide 56: Energy Development Applications*, the majority of applications under *Guide 65: Resources Applications for Conventional Oil and Gas Reservoirs*, and all utility applications, including those under *Guide 28: Applications for Power Plants, Substations, and Transmission Lines*, to be submitted electronically. EAS will also provide notification to each applicant of the result of its application, after which the applicant can obtain relevant documents electronically from the EUB Web site.

On October 29, 2002, an industry focus group started meeting with project staff to discuss EAS Phase 1. "The role of the focus group is to provide feedback on various aspects of the system, help the EUB interpret stakeholder feedback, identify risks, assist in the development of risk mitigation strategies, provide input for future phases, and promote EAS to industry," explains Susan. Overall, the focus group's ongoing feedback will help EAS Phase 1 improve efficiency in the applications process.

"I support industry's use of the Field Surveillance Inspection System, or FIS, through a telephone help line and e-mail account. When the first phase of FIS was launched, industry contacted me about 70 times a week with questions. Three months later, industry requests dropped to around 15 a week. Industry is adjusting well to FIS, and that is an advantage for all Albertans."

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PUBLIC SAFETY AND SOUR GAS: PROJECT PARTICIPANTS TAKING STAKEHOLDER INVOLVEMENT AND INNOVATION TO NEW LEVELS

Any ambitious project needs reliable reporting procedures in place before progress can really be measured. But what often isn't included is reference to the long hours, persistent dedication, and required skills that go into moving any significant project forward.

In January 2000, the EUB formed the Provincial Advisory Committee on Public Safety and Sour Gas (PS&SG) to examine Alberta's sour gas regulatory system and consult with Albertans on issues of sour gas development. At the time, EUB Chairman Neil McCrank said, "Our vision is to continue to build a regulatory framework that inspires public confidence. There is no better example of our commitment to this than the Public Safety and Sour Gas project."

Following a year of review and consultation, the Advisory Committee, while acknowledging that a comprehensive regulatory and enforcement framework already existed, made 87 recommendations for improvement in sour gas matters. In January 2001, the Public Safety Implementation Team was established to oversee the PS&SG initiative and to ensure that all recommendations are addressed.

As with any project of this magnitude, many of the ideas and innovative measures geared to securing public safety have resulted in a cultural shift across the EUB regulatory system. Synergies have sprouted as a result of this overarching initiative that have added value to nearly every aspect of EUB influence.

The PS&SG recommendations cut across many EUB branches, including Law, Applications, Compliance and Operations, Resources, Field Surveillance, and Corporate Support, and involve other Alberta government agencies and regional health authorities, as well as industry, the University of Calgary, and the University of Alberta. Many of the project's achievements and milestones can be directly tied to the EUB's ongoing commitment to follow through on accessing and using necessary resources and undertaking research.

Among the milestones realized by the PS&SG project this past year, a few stand out as being innovative, forward thinking, and cost effective. They span the spectrum of EUB authority and include projects as diverse as mobile air quality monitoring, complaint follow-up, emergency preparedness, and making the EUB hearing process more understandable for participants.

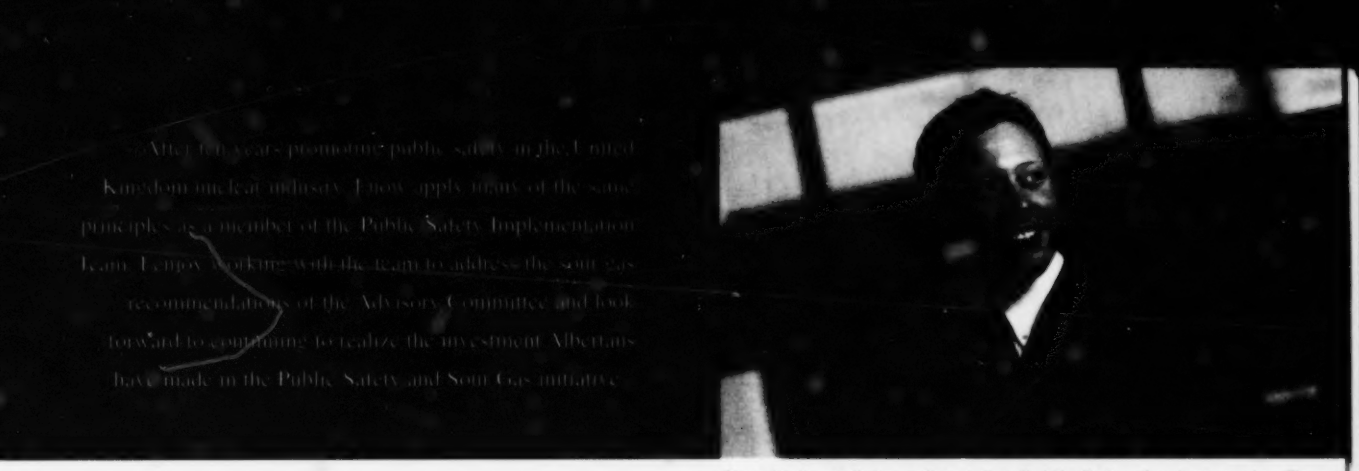
CONFRONTING AIR QUALITY CONCERNS

"Air quality affects everybody, and we need better ways to respond to concerns out there. We've heard that loud and clear from all corners of the province," says Dennis McCullough, a PS&SG project leader with Field Surveillance.

Dennis and his team have collected and analyzed the type, sensitivity, reliability, and location of available air monitoring equipment that is in place provincewide. Findings led to a comprehensive inventory of mobile, stationary, and permanent air monitoring equipment in the province and developing best practice guidelines to ensure that a consistent approach exists for collecting, analyzing, and communicating air monitoring results. "We now have the planning mechanisms and the tools to do the job right," Dennis adds.

ENHANCING UNDERSTANDING

The Law Branch has been working since early 2001 to make the EUB hearing process easier to understand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Gary Neilson, Science Specialist, Public Safety Implementation Team

and more user friendly for participants by making EUB resources more accessible to those needing assistance.

"We've done an immense amount of work, and it's been well worth it," says JP Mousseau, a PS&SG project leader with the Law Branch. "We've received very positive responses from those we've helped, and these initiatives have gone a long way to serving concerned Albertans better."

CONTINUOUS IMPROVEMENT TO EUB DATA ACCESS

Looking to the future, the EUB is reviewing and electronically organizing large quantities of data related to wells, pipelines, and facilities. This task will ultimately lead to offering a comprehensive database that will act as a single source of up-to-date and background information. This project began as a key recommendation two years ago and is expected to be operating and publicly accessible in early 2004.

"The EUB has a great deal of sour gas information, and we're working to provide it in a way that's easily accessible to industry and to the public," says Harvey Halladay, a PS&SG project leader with the Resources Branch. "It's also important to have the data in an environment that's adaptable and scalable, because we want to make this information as easy to reach as possible. That's going to be our primary driver as new technologies become available to us."

ON TARGET AND ACHIEVING EXCELLENCE

To date, the EUB is not only on target with its three-year implementation plan but has eclipsed expectations of sharing information with other government departments, enlisting skill sets needed to address technical recommendations, and seeing that all those concerned with following through on improvements are committed to the job.

Of equal importance throughout the PS&SG process has been the ability to meld aspects of some recommendations into others and to achieve completion in some areas while simultaneously initiating improvement in others.

Work being done on PS&SG recommendations supports the overarching EUB initiative to inform key stakeholders of ongoing work practices and interactions, whether it be in the field, the hearing room, or cyberspace.

The past year's positive results have also garnered praise from the project's watchdog, the Provincial Advisory Committee on Public Safety and Sour Gas. This committee, composed of industry, local and provincial government, and public representatives, plays a key role in keeping the project on track and accountable to its key stakeholders—the people of Alberta.

"Being a member of the Advisory Committee, I can attest to the amount of good work that's been done, especially when it comes to enlisting the involvement and the skills needed," says Doreen Healy, founder of the Native Economic Developers Association and a Blood Band and PS&SG Advisory Committee member.

"While there's still a lot of work to do, we've been impressed with the level of dedication and the degree of enthusiasm and ingenuity exercised by EUB staff."

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Pauline Murdock, Human Resources Advisor

WORKING AT THE EUB, WORKING FOR ALBERTANS

The people who work for the EUB are committed, competent, and passionate individuals who fundamentally believe they are working in the best interests of Albertans. Since each and every Albertan is touched in some way by the energy and utilities sectors, finding the balance among all Albertans' perspectives can be challenging.

"It takes talented people to rise to this challenge, and the EUB recognizes that we must be an excellent employer to attract and retain these top-notch people," says Shawn Yaskiw, Recruitment and Human Resources Services Leader.

WHO WORKS FOR THE EUB

Of the 750 EUB staff, 80 per cent are dedicated to a core business function, meaning their job connects directly with adjudication, regulation, information, or knowledge. These include environmental science specialists, engineers, geologists, technologists in petroleum, chemicals, and the environment, and information and knowledge specialists who manage our library and electronic information on the Internet. The other 20 per cent provide support to the staff focused on core functions.

WHY THEY JOIN OUR TEAM

One reason people choose to join our team is our New Professional Program, whereby new recruits circulate through a number of different branches to learn about what we do and where they can best realize their career goals. Pauline Murdock, Human Resources Advisor, points out, "Human Resources staff customize the program with the new staff member to ensure everyone gets the most out of this unique opportunity."

Understanding that the EUB looks for many of the same talents as the industries we regulate, we offer competitive compensation and benefits. But, it's more than just that: 51 per cent of our recently hired staff told us they were encouraged to join us by people already working at the EUB. We take a great deal of pride in the fact that our own people recommend us as an employer to friends and acquaintances.

WHY THEY STAY

We believe meaningful work and great opportunities keep our staff motivated and engaged in their jobs. The EUB has a challenging environment where we strive to create a positive atmosphere that focuses on teamwork. Part of this positive atmosphere is an emphasis on continual learning and growth, whether through professional organizations, taking on new projects, or fostering change in a responsive regulatory setting.

Our staff believe they are making a difference. As our Chairman Neil McCrank says, "The EUB strives to prepare people to work anywhere, while engaging them so their choice is to stay with the EUB."

Alberta has many great resources, and oil and gas in particular must be managed carefully. The EUB has a huge job to do. My role is to inspect sweet and sour gas facilities and pipelines and handle public concerns. I deal with people from all walks of life and every day has been an education. I plan to work here for as long as I can, because I'm proud of the job that the EUB does as a whole.

Kathy Sherritt, Field Inspector, Drayton Valley Field Centre

I'd been an EUB inspector for 19 years when my daughter Kathy joined the Wainwright Field Office as a summer student. The staff there encouraged her to apply for a full-time position. When Kathy joined the EUB, I believed it was a wonderful opportunity for her. I knew she would handle the challenges and do a great job for herself and her community.

Ray Stone, Senior Technician, Bonnyville Field Centre

THE EUB'S FACE IN THE FIELD

You've seen statistics and you've read reports. Alberta's energy sector continues to thrive. That means the EUB needs more than ever to deliver on the promise of securing safe and responsible resource development.

The EUB's Field Surveillance teams put this promise into practice each day. For many Albertans, field personnel are the face of the EUB. Field staff listen to landowner concerns at kitchen tables, attend and organize open houses and information sessions, respond personally at all hours to complaints, and ensure that incidents are promptly addressed.
But what else do EUB field inspectors do? How do they go about the business of protecting public safety in a workspace that spans thousands of hectares? The answers vary with the territory, and putting this task into perspective means getting it straight from inspectors themselves.

"Our people really are the EUB to many in our region," says James Lutes, Field Inspector, High Level Field Centre. "We deal with the calls that range from odours to flaring. We care what goes on here because we're all neighbours, part of the same community. We've got as much interest as anybody in how oil and gas development is handled here."

Karen Veitch, of the Midnapore Field Centre, agrees: "Without a doubt, if people know who you are and have a good relationship with you, they are more likely to call with concerns and to trust you to handle them effectively and efficiently. Community means getting to know your neighbours and understanding their concerns and feelings."

INSPECTORS STRATEGICALLY LOCATED

There are currently 80 field inspectors located strategically across the province. Main offices in northern Alberta include Bonnyville, Grande Prairie, St. Albert, and Drayton Valley, with sub-offices in Fort McMurray and High Level. Southern Alberta offices include Red Deer, Wainwright, Midnapore, and Medicine Hat. Inspectors in these 10 locations monitor industry operating practices and enforce requirements.

The EUB is confident that in most cases the energy industry strives to comply with EUB regulations, requirements, and programs. Serious incidents are few in number, and field personnel make every effort to see that people in rural areas know whom to contact if the need arises.

"Blowouts during drilling and servicing operations are very serious, and we pay close attention to these incidents and how industry deals with them," says Larry Paslawski, Assistant Team Leader, Drayton Valley Field Centre. "Noncompliance with EUB regulations leaves a company open to escalating enforcement consequences."

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Of the 750 EUB staff, 80 per cent are dedicated to a core business function, meaning their job connects directly with adjudication, regulation, information, or knowledge. These include environmental science specialists, engineers, geologists, technologists in petroleum, chemicals, and the environment, and information and knowledge specialists who manage our library and electronic information on the Internet. The other 20 per cent provide support to the staff focused on core functions.

WHY THEY JOIN OUR TEAM

One reason people choose to join our team is our New Professional Program, whereby new recruits circulate through a number of different branches to learn about what we do and where they can best realize their career goals. Pauline Murdock, Human Resources Advisor, points out, "Human Resources staff customize the program with the new staff member to ensure everyone gets the most out of this unique opportunity."

Understanding that the EUB looks for many of the same talents as the industries we regulate, we offer competitive compensation and benefits. But, it's more than just that: 51 per cent of our recently hired staff told us they were encouraged to join us by people already working at the EUB. We take a great deal of pride in the fact that our own people recommend us as an employer to friends and acquaintances.

WHY THEY STAY

We believe meaningful work and great opportunities keep our staff motivated and engaged in their jobs. The EUB has a challenging environment where we strive to create a positive atmosphere that focuses on teamwork. Part of this positive atmosphere is an emphasis on continual learning and growth, whether through professional organizations, taking on new projects, or fostering change in a responsive regulatory setting.

Our staff believe they are making a difference. As our Chairman Neil McCrank says, "The EUB strives to prepare people to work anywhere, while engaging them so their choice is to stay with the EUB."

"Alberta has many great resources, and oil and gas in particular must be managed carefully. The EUB has a huge job to do. My role is to inspect sweet and sour gas facilities and pipelines and handle public concerns. I deal with people from all walks of life and every day has been an education. I plan to work here for as long as I can, because I'm proud of the job that the EUB does as a whole."

Kathy Sherriffs, Field Inspector, Drayton Valley Field Centre

"I'd been an EUB inspector for 19 years when my daughter Kathy joined the Wainright Field Office as a summer student. The staff there encouraged her to apply for a full-time position. When Kathy joined the EUB, I believed it was a wonderful opportunity for her. I knew she would handle the challenges and do a great job for herself and her community."

Ray Stone, Senior Technician, Bonnyville Field Centre

THE EUB'S FACE IN THE FIELD

You've seen statistics and you've read reports. Alberta's energy sector continues to thrive. That means the EUB needs more than ever to deliver on the promise of securing safe and responsible resource development.

The EUB's Field Surveillance teams put this promise into practice each day. For many Albertans, field personnel are the face of the EUB. Field staff listen to landowner concerns at kitchen tables, attend and organize open houses and information sessions, respond personally at all hours to complaints, and ensure that incidents are promptly addressed. But what else do EUB field inspectors do? How do they go about the business of protecting public safety in a workspace that spans thousands of hectares? The answers vary with the territory, and putting this task into perspective means getting it straight from inspectors themselves.

"Our people really are the EUB to many in our region," says James Lutes, Field Inspector, High Level Field Centre. "We deal with the calls that range from odours to flaring. We care what goes on here because we're all neighbours, part of the same community. We've got as much interest as anybody in how oil and gas development is handled here."

Karen Veitch, of the Midnapore Field Centre, agrees: "Without a doubt, if people know who you are and have a good relationship with you, they are more likely to call with concerns and to trust you to handle them effectively and efficiently. Community means getting to know your neighbours and understanding their concerns and feelings."

INSPECTORS STRATEGICALLY LOCATED

There are currently 80 field inspectors located strategically across the province. Main offices in northern Alberta include Bonnyville, Grande Prairie, St. Albert, and Drayton Valley, with sub-offices in Fort McMurray and High Level. Southern Alberta offices include Red Deer, Wainwright, Midnapore, and Medicine Hat. Inspectors in these 10 locations monitor industry operating practices and enforce requirements.

The EUB is confident that in most cases the energy industry strives to comply with EUB regulations, requirements, and programs. Serious incidents are few in number, and field personnel make every effort to see that people in rural areas know whom to contact if the need arises.

"Blowouts during drilling and servicing operations are very serious, and we pay close attention to these incidents and how industry deals with them," says Larry Paslawski, Assistant Team Leader, Drayton Valley Field Centre. "Noncompliance with EUB regulations leaves a company open to escalating enforcement consequences."

"My job is both demanding and rewarding. Working with First Nation and Metis communities provides me with a chance to ensure that communities impacted by oil and gas development understand the EUB requirements and have the opportunity to develop solutions for some everyday concerns. As an aboriginal person, it is gratifying to be at the forefront of these issues and provide input that benefits aboriginal communities."

Jacob Handel, Field Representative, St. Albert Field Centre

A DAY IN THE LIFE...

A typical day can see EUB Field Surveillance staff respond to and address complaints related to all aspects of energy development. They also inspect drilling and service rigs, oil and gas production facilities, and pipelines to ensure that operators comply with all applicable EUB standards.

The addition of 12 new field staff in 2001/2002 was in direct response to public safety concerns. It also helped the EUB's Field Surveillance Branch target priority areas that include addressing and reducing pipeline corrosion incidents, prioritizing public safety and sour gas initiatives, increasing air monitoring for hydrogen sulphide (H_2S) and sulfur dioxide (SO_2) odours, and substantially increasing inspections of well test flaring at gas production sites.

A large part of the EUB's promise to Albertans in 2002 was to follow up on complaints. "We place a high priority on addressing these concerns effectively and efficiently," says Bob Swain, Assistant Team Leader, Bonnyville Field Centre. "We also work with industry to improve communications with the public, because it reduces complaints, keeps everyone informed and—most important—builds relationships based on understanding between industry and the public."

When someone calls an EUB Field Centre anywhere at any time, a team member greets the caller. Field Surveillance also maintains a random complaint callback program. The information received is analyzed, catalogued, and shared to help ensure that complaints are being handled in a timely and satisfactory way.

The most common complaints include odours, property/lease management issues, flaring, smoke, and noise associated with upstream petroleum development. Odour complaints alone represented almost 37 per cent of all public complaints received by the EUB in 2002.

Results show that while complaints have decreased overall, the need to consistently inspect, monitor, and remind operators of their responsibility to Albertans is essential. "We're getting much better at responding to public complaints, especially when it comes to air quality monitoring and odours," says Fiona LeBlanc, Field Inspector, Grande Prairie Field Centre. "But even though we're getting fewer of them, we take all complaints seriously and we follow up."

"We also expect operators to monitor and update their equipment. The use of new monitoring and scrubbing technologies, combined with proper equipment maintenance, reduces emissions, and that benefits everyone."

PUBLIC SAFETY ALWAYS A PRIORITY

Generally, Alberta's energy industry works to comply with EUB regulations, requirements, and programs. But while field inspectors are aware of industry's ongoing efforts, companies that fail to meet requirements or follow EUB direction are subject to enforcement actions, with deadlines for fixing problems. These are reinforced by penalties that can include full operational shutdown.

"The impact that gas production facilities have on the public is a concern to us," says Larry Paslawski. "In response, we have increased inspections of gas production and well test flaring operations."

"The EUB realizes the importance of youth and their role in Alberta's future. I work with schools to inform students about the role of the EUB in their community, providing them with tools to become active and informed citizens. My work helps ensure that Alberta is a competitive, resourceful province for our children. For me, as a mother and member of a fourth-generation farm, that is the achievement of a life-time goal."

Holly James, Office Support, Wainwright Field Centre

These increased inspections, along with *Guide 60: Upstream Petroleum Industry Flaring*, have fostered industry's emphasis on flaring reduction, which has led to a decrease in flaring-related complaints.

Additional oil and gas production means additional pipeline construction. Overall, pipeline performance has improved over the past few years. While new monitoring technologies aid industry and the EUB in detecting pipeline flaws, work in this area increases as new construction continues.

"We've noticed improvements in key areas we inspect," says Tyler Callicott, Medicine Hat Field Centre. "We've got a large number of pipelines in our area due to the amount of gas production going on here, so it's important to make sure we keep a rigorous inspection schedule to ensure industry compliance and public safety."

"We investigate 100 per cent of corrosion-related system failures," says Brent McGarry, Inspector, Wainwright Field Centre. "We're also making sure that sensitive leak detection systems, automated shut-in equipment, and pipeline patrols in the air and on the ground are being used to their fullest potential."

On the oil and liquids side, the EUB's goal is to work with industry and other government agencies to minimize the environmental impacts related to spills. All liquid releases that pose a threat to public safety or the environment are inspected immediately.

COLLABORATIVE APPROACH GAINING GROUND

A collaborative approach to seeking solutions to an issue is not only efficient but also beneficial in striking and maintaining working relationships with all affected parties.

"The ability to identify problems and get them fixed in a safe and efficient manner is extremely important," says Reid Henry, Field Inspector, St. Albert Field Centre. "When we put our heads together we can learn more, which makes it easier to address problems in their early stages."

Working with industry, government, and concerned citizens has proven beneficial. Landowners, the EUB, and industry work together in more than 50 community-based groups, or "synergy groups," to work through local issues, such as air quality monitoring, oil sands development, sour gas drilling, and facilities and pipeline construction. The size and structure of the groups, together with the issues they address on a regular basis, vary from region to region.

"The benefits of having these groups involved in energy development can't be emphasized enough," says Jim Benum, Red Deer Field Centre. "This approach not only puts a human face on the problems and issues we deal with every day, but also provides individuals with a direct line to the EUB, something farmers, ranchers, and city dwellers use regularly."

Whether interacting with industry operators, landowners, First Nations and Metis, or other EUB staff, field inspectors bring a wealth of experience and knowledge to the table and are committed to public safety and working in the public interest.

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APPLICATIONS, HEARINGS, AND APPROPRIATE DISPUTE RESOLUTION SUMMARY FOR 2002

2002 APPLICATIONS

WELLS

- 14 415 new approvals: sweet single well, sweet multiwell pad, sour single well, sour multiwell pad, sour well, critical sour well

PRODUCTION FACILITIES

- 1230 new sweet and sour facilities: oil and gas batteries, satellites, compressor stations, tank farms, pump stations
- 481 modifications to the above facilities
- No new sulphur recovery gas processing plants
- 12 modifications to sulphur recovery gas processing plants

PIPELINES

- 9284 pipeline permits for new construction and amendments to existing pipeline licences

OIL SANDS

- 3 registered applications/proceedings for new or expansion of existing mining or plant projects
- 7 nonregistered applications related to mine or plant operations
- 32 new experimental and primary recovery oil sands schemes
- 21 new commercial schemes and amendments

COAL

- 15 registered applications for new or modified coal projects
- 20 nonregistered applications related to mining operations

REFINERIES (OIL SANDS, OIL, OR GAS)

- 18 industrial development permits

ENVIRONMENTAL REVIEW

- 380 sour gas flare permits

RESERVOIR DEVELOPMENT

- 2643 applications for reservoir schemes, spacing, commingling, and others

UTILITIES

- 135 electric facility applications: transmission lines and substations, power plants, industrial system designations, electrification association, and service area change
- 79 gas utility applications
- 177 electric utility applications
- 111 special franchise agreements
- 36 other types of applications: sale of assets, milk price orders, exemptions
- 4 nonroutine complaints

PROCEEDINGS

- 17 energy-related hearings
- 76 utilities-related hearings
- 5 prehearing sessions

APPROPRIATE DISPUTE RESOLUTION PROGRAM

- 198 EUB staff facilitations initiated and 154 completed
- 20 mediations between landowners and companies
- 7 mediations between companies

DEFINITIONS

- satisfactory inspection
- minor unsatisfactory
- major unsatisfactory inspection

The EUB oversees the safe, responsible development of Alberta's energy resources and is committed to building a regulatory framework that inspires public confidence. As part of this mandate, the Field Surveillance Branch inspects over 110 000 operating wells, over 16 500 oil batteries and associated satellites, over 700 gas plants, and about 317 000 kilometres (km) of pipelines that form the core of Alberta's energy infrastructure. EUB field staff also enforce standards and conditions set out in licences, approvals, and EUB regulations and requirements.

Operating out of eight main EUB Field Centres and two sub-offices throughout Alberta, field staff inspect construction, operation, and abandonment operations at oil, gas, and oil sands facilities (including pipelines, compressors, and processing plants). They respond to emergencies and public complaints on a 24-hour basis and ensure a consistent approach to enforcement of requirements with noncompliant operators. Recognizing the importance of open communications and community input, the Field Surveillance Branch increased the time spent facilitating the resolution of landowner-industry conflicts and participating in public-industry liaison committees in 2002.

Field Surveillance staff will continue to focus on pipeline corrosion, noncompliant operators, air monitoring activities, facilitation, and improving communication with synergy groups and First Nations and Metis communities throughout the province.

For 2002 and future years, information from the field will be reported for the calendar year (January 1 to December 31), instead of the fiscal year (April 1 to March 31). As a result, data from 2002 and 2001/2002 include a three-month overlap.

INSPECTIONS

The EUB kept pace with high activity levels in energy development:

- Approximately 12 800 wells were drilled in 2002,[1] a 15 per cent decrease from 2001.
- 8255 initial inspections and 2201 reinspections were completed in calendar year 2002, in comparison to 8407 initial inspections and 2129 reinspections completed in 2001/2002, due to increased personnel allocated to facilitation work, training new staff, and the new field inspection system.

Satisfactory inspections increased significantly, from 64 per cent in 2001/2002 to 70.6 per cent in 2002. Minor unsatisfactory inspections remained constant at 25 per cent, while major and serious unsatisfactory inspections decreased from 4.4 per cent in 2001/2002 to 3.9 per cent in 2002. There was only one serious unsatisfactory inspection in 2002, compared to 11 in 2001/2002.

ENFORCEMENT

The EUB is confident that, in general, Alberta's energy industry strives to comply with EUB regulations, requirements, and programs. However, companies that fail to meet requirements or follow EUB direction are subject to escalating enforcement consequences. Enforcement actions always include deadlines for fixing a problem and may be reinforced by penalties, such as temporary or long-term suspension of operations.

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1. For the purposes of this report, drilling activity includes wells that have finished drilling; it does not include spuds (new well starts) that were not completed in 2002.

In 2002 the number of facilities the EUB ordered suspended decreased to 128 facilities, down from 142 in 2001/2002 and 236 in 2000/2001. However, the cost to industry was greater: $25.8 million in 2002, compared to $16.3 million in 2001/2002 and $12 million in 2000/2001.

Notable improvements in industry compliance include well servicing operations, where since 1998/1999 the percentage of unsatisfactory inspections has decreased from 12.2 to 6.3. As well, of all the inspections conducted on gas facilities, the percentage found to have major unsatisfactory noncompliances decreased from 4.3 in 2001/2002 to 2.3 in 2002.

WELL CONTROL OCCURRENCES

Blows and blowouts during drilling and servicing operations are among the most serious incidents for well operations and have the potential to cause public safety and environmental impacts. The EUB regards the number of blows, blowouts, and kicks as a primary indicator of industry's drilling and servicing performance and pays particularly close attention to industry's response to these incidents.

Requirements for high training standards and sophisticated blowout detection and prevention equipment have helped to keep well control occurrences to a minimum. Of the approximately 12 800 wells drilled in 2002 (as explained in footnote 1), the EUB recorded

- 6 blowouts, 0 blows, and 78 kicks during drilling operations, and
- 5 blowouts and 2 blows during servicing.

All were brought under control with minimal environmental damage and no public safety impacts. The EUB will continue to review all blows and blowouts related to drilling and servicing operations to identify changes to equipment, procedures, and regulations that may be required to reduce drilling and servicing blows and blowouts.

The 78 kicks recorded in 2002 equate to a kick occurrence rate of approximately 6 kicks per 1000 wells drilled. The kick occurrence rate has remained relatively constant for the last five years and is a significant improvement from the years prior to 1997/1998, when the rate averaged 23 kicks per 1000 wells drilled.

GAS PRODUCTION

The impact gas production facilities have on the public continues to be of concern to the EUB. Fugitive emissions, noise from compressors, black smoke, and flaring are the primary issues affecting the public. In response there were 2170 inspections completed on gas processing facilities in 2002, which is a significant increase compared to 2001/2002, when 1710 inspections were conducted. In 2002, EUB field staff conducted 105 inspections of well tests to ensure compliance with *Guide 60: Upstream Petroleum Industry Flaring Guide*. This compares to 122 inspections in 2001/2002.

Sulphur recovery efficiency at gas plants has improved to 98.9 per cent. Overall, sulphur emissions have decreased by 18 per cent since 2000 (from 78 000 to 64 000 tonnes).

DEFINITIONS

- A **satisfactory inspection** finds that all regulations and requirements are met.
- A **minor unsatisfactory** inspection finds a contravention of regulation(s) and/or requirement(s) that does not result in a direct threat to the public and/or the environment and does not adversely affect oil and gas operations.
- A **major unsatisfactory inspection** finds a contravention of regulation(s) and/or requirement(s) that an operator has failed to address and/or has the potential to cause an adverse impact on the public and/or the environment.

The EUB oversees the safe, responsible development of Alberta's energy resources and is committed to building a regulatory framework that inspires public confidence. As part of this mandate, the Field Surveillance Branch inspects over 110 000 operating wells, over 16 500 oil batteries and associated satellites, over 700 gas plants, and about 317 000 kilometres (km) of pipelines that form the core of Alberta's energy infrastructure. EUB field staff also enforce standards and conditions set out in licences, approvals, and EUB regulations and requirements.

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ENFORCEMENT

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- A **serious unsatisfactory** inspection finds a total disregard for regulation(s) and or requirement(s) that is causing or may cause significant impact on the public and/or the environment.
- **Blows** are the unexpected release of wellbore fluids into the atmosphere, while **blowouts** are the complete loss of control of the flow of fluids from a well. During drilling operations, any unexpected entry of water, gas, oil, or other formation fluid into a wellbore that is under control and can be circulated out is called a **kick**.

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PIPELINES

Alberta has 317 417 km of energy-related pipeline. Of the 516 inspections conducted on pipeline failures/hits in 2002, the EUB recorded

- 46 major unsatisfactory inspections and 0 serious unsatisfactory inspections—all were brought into compliance;
- 34 ruptures, compared to 32 in 2001/2002;
- a failure frequency of approximately 2.5 failures/1000 km—a substantial improvement over the 1998 benchmark of 5 failures/1000 km;
- 66 contact damage incidents, down from 80 incidents in 2001/2002;
- 563 pipeline corrosion incidents, up from 503 in 2001/2002.

The number of major unsatisfactory inspections increased in 2002 due to the implementation of *Guide 66: Pipeline Inspection Manual*, which clarified EUB expectations for identifying and addressing corrosion problems. The increase in pipeline corrosion incidents is mainly attributed to the Swan Hills and Judy Creek Fields, where the pipeline systems had external coating problems due to increased product temperatures.

The EUB emphasizes reducing pipeline corrosion. We investigate 100 per cent of corrosion failures. As well, sensitive leak detection systems, training and awareness programs, automated shut-in equipment, and pipeline patrols (aerial and ground) being used by industry are working to reduce the effects of pipeline failures.

SPILLS

The EUB's goal is to minimize the environmental impacts of liquid releases (spills) by working cooperatively with industry and other government agencies.

- 100 per cent of all liquid releases that pose any kind of public safety or environmental threat are inspected. There were 26 such releases in 2002.
- More than 76.9 per cent of liquid releases were low volume, and most were contained on lease.
- 1445 liquid releases were reported in 2002, a slight increase from the 1434 in 2001/2002.
- Over the past five years, the volumes of hydrocarbon and produced water spills have steadily decreased. Spill volumes for hydrocarbon and produced water in 2002 were 5188.8 cubic metres (m^3) and 19 164.8 m^3 respectively. This is a reduction from the 2001/2002 release volumes of 5877.3 m^3 hydrocarbon and 19 748.0 m^3 produced water.

AIR MONITORING

Field Surveillance uses two mobile air monitoring units to assist inspection staff in identifying facilities that emit fugitive emissions. In 2002, the EUB monitored 461 facilities for H_2S and SO_2 emissions, a considerable increase from the 28 facilities monitored in 2001. Industry is improving its compliance record in the area of air emissions from oil and gas facilities; for example, the percentage of unsatisfactory inspections went from 36 per cent in 2001 (10 unsatisfactory inspections out of 28) to 6 per cent from July to December 2002 (13 unsatisfactory inspections out of 227).

In addition to carrying out routine monitoring and responding to complaints, the mobile monitoring units are available for emergency response situations. In 2002, the air monitoring units responded to three emergency situations.

RESPONDING TO PUBLIC CONCERNS

One measure of the EUB's performance is our responsiveness to public complaints. Field Surveillance staff respond to all complaints within our jurisdiction. The focus is to ensure prompt, effective, and lasting resolution of any problem identified.

Although the activity level in the oil and gas industry remained high in 2002, there has been a downward trend in complaints, with 869 complaints in 2002, 12 fewer than in 2001/2002. Of the individuals surveyed, 91 per cent were satisfied with the response from the EUB, compared to 90 per cent in 2001/2002.

The EUB receives complaints on a variety of issues. The most common issue is odours, with 372 odour complaints, 5 more than in 2001/2002.

In 2002, Field Surveillance efforts to connect with the community included

- staff involvement totalling 540 days—up from 400 days in 2001/2002—in 198 facilitations, of which 129 were successfully resolved, 44 are ongoing, and only 2 required hearings;
- open houses in Pincher Creek, Bonnyville, and Medicine Hat (attendance was 110, 166, and 110 respectively); and
- staff participation in most of the province's 56 active synergy groups.

The EUB strongly endorses the cooperative approach of synergy groups as an effective way to improve communication and identify and address issues.

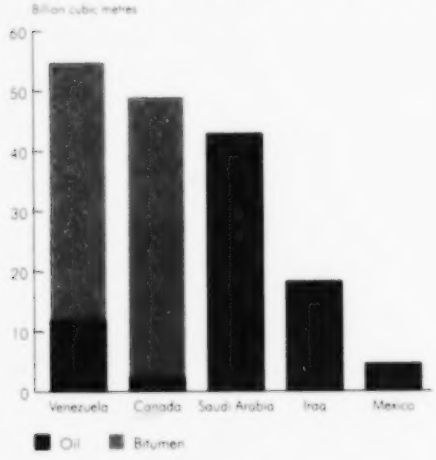
For more information on the EUB's Field Surveillance activities, including inspections, enforcement actions, and subsequent industry compliance, refer to ST-57: *Field Surveillance Provincial Summary*.

ENERGY AND UTILITIES RESOURCES IN ALBERTA

An overview of activity in Alberta's energy and utilities sectors in 2002

RESERVES, PRODUCTION, AND DELIVERIES: BITUMEN

Comparison of World Oil and Bitumen Reserves



Source: National Energy Board

Alberta has the largest oil sands resource in the world. Ultimately, the province may recover as much as 50 billion cubic metres (m^3), over 300 billion barrels (bbls), of bitumen from the oil sands. Of this potentially recoverable bitumen, current estimates indicate that about 28 billion m^3 (176 billion bbls) are recoverable with today's technology and economic conditions. This is 100 times larger than Alberta's remaining conventional oil reserves and compares favourably with Venezuela's bitumen reserves and Saudi Arabia's conventional oil reserves.

Alberta's Crude Bitumen Remaining Reserves and Production, Compared to Conventional Remaining Reserves and Production

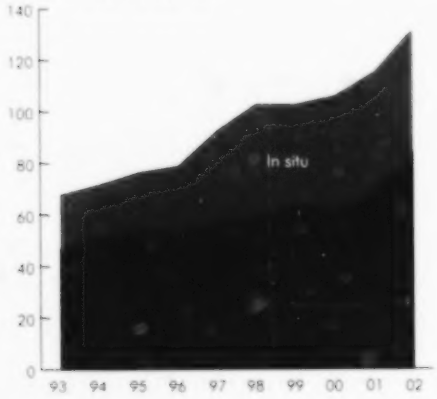
Million cubic metres (billion barrels)

Annual production of bitumen and conventional crude oil is just a sliver of the existing bitumen reserves. Alberta is at a relatively early stage in the likely long life history of the oil sands resource.

Bitumen reserves are not expected to change significantly over the short term, as the challenge in oil sands development is not finding the bitumen, but recovering it cost effectively.

Alberta Crude Bitumen Production

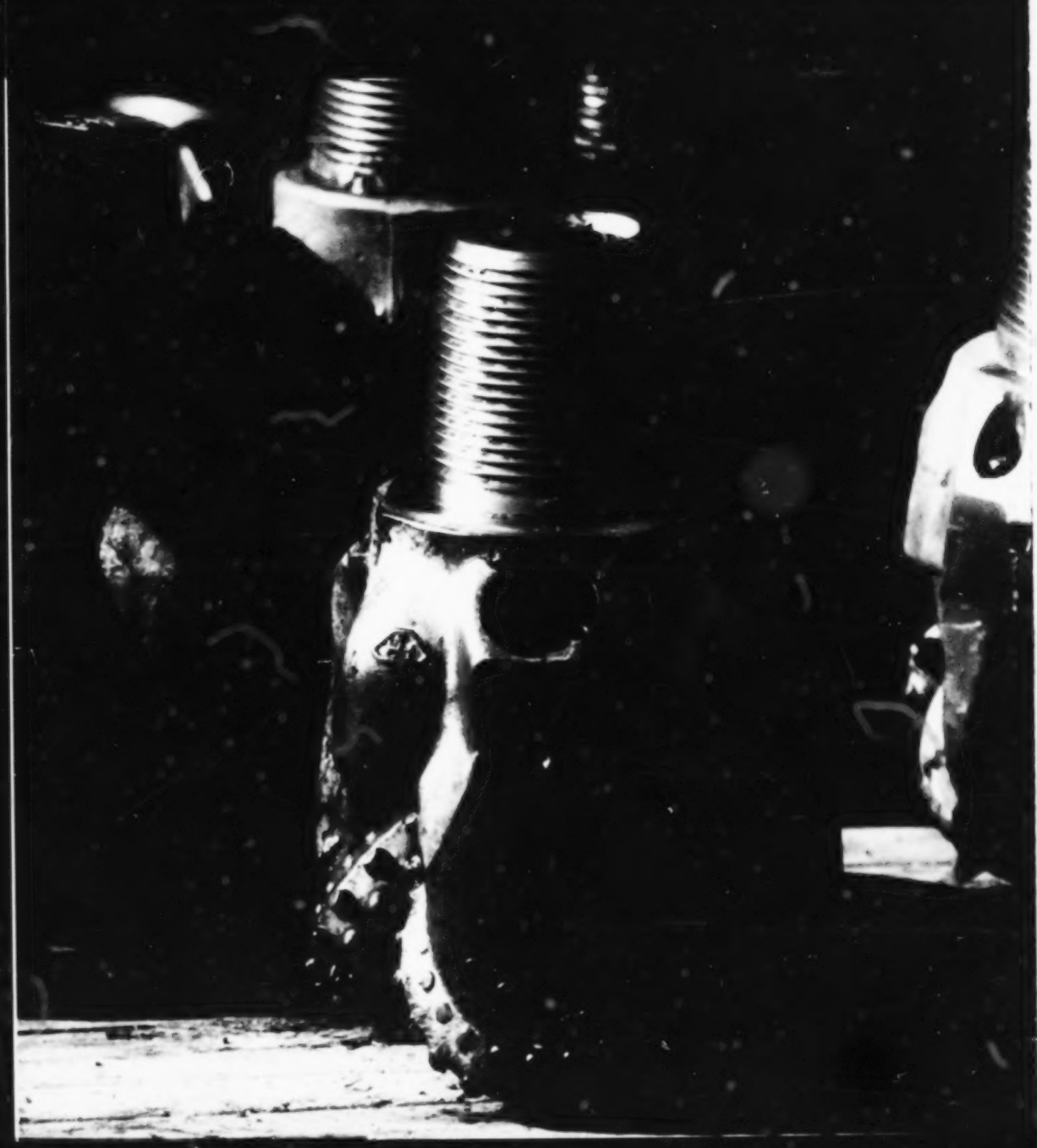
Thousand cubic metres per day



Bitumen production has almost doubled in the past 10 years. Raw bitumen production surpassed conventional crude oil production for the first time in 2001. The gap widened in 2002, with production of bitumen at approximately 132 thousand cubic metres per day (m^3/d) (831 thousand barrels per day (b/d)). Surface mining accounted for approximately 64 per cent and in situ accounted for approximately 36 per cent of the total bitumen production (see page 13 for a description of surface mining and in situ technology). From surface mineable bitumen, approximately 70 thousand m^3/d (440 thousand b/d) of synthetic crude oil was produced.

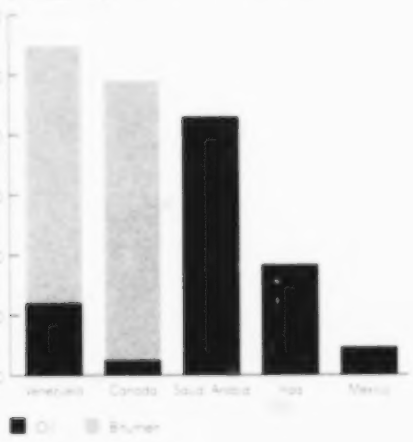
ENERGY AND UTILITIES RESOURCES IN ALBERTA

An overview of activity in Alberta's energy and utilities sectors in 2002



RESERVES, PRODUCTION, AND DELIVERIES
BITUMEN

Comparison of World Oil and Bitumen Reserves



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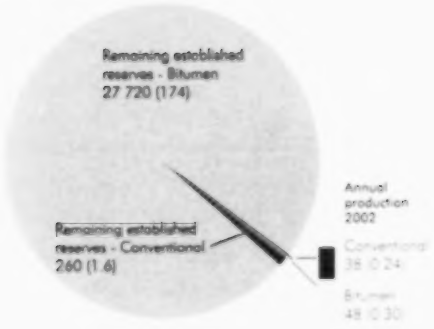
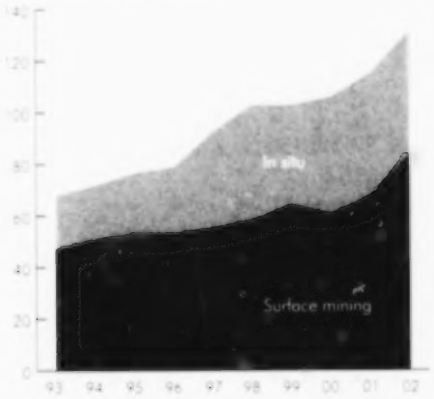
Alberta's Crude Bitumen Remaining Reserves and Production, Compared to Conventional Remaining Reserves and Production


Remaining established reserves - Bitumen 27 720 (174)
Remaining established reserves - Conventional 260 (1.6)
Annual production 2002
Conventional 38 (0.24)
Bitumen 48 (0.30)

Annual production of bitumen and conventional crude oil is just a sliver of the existing bitumen reserves. Alberta is at a relatively early stage in the likely long life history of the oil sands resource.

Bitumen reserves are not expected to change significantly over the short term, as the challenge in oil sands development is not finding the bitumen, but recovering it cost effectively.

Alberta Crude Bitumen Production



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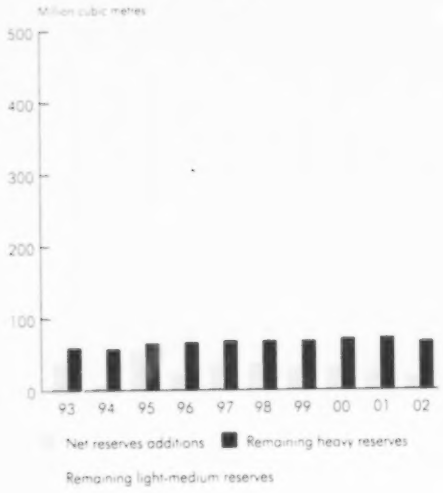
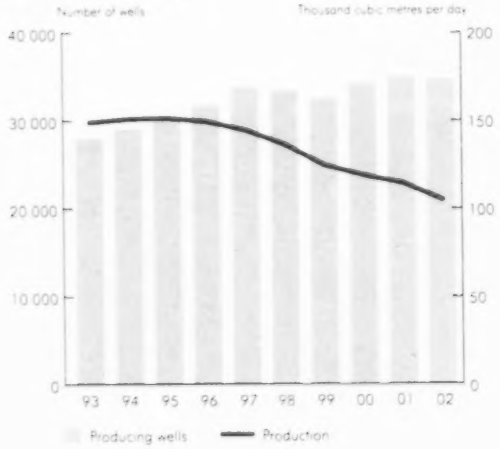
RESERVES, PRODUCTION, AND DELIVERIES: CRUDE OIL

Net Reserves Additions and Remaining Reserves of Conventional Crude Oil



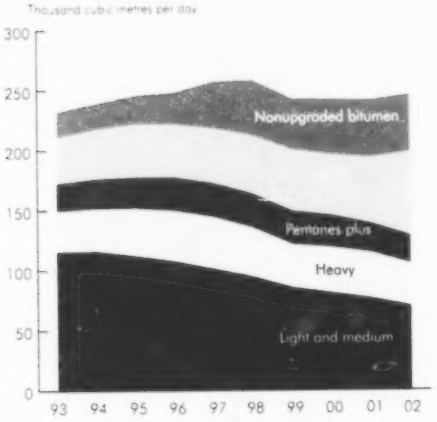
Some 20 million m^3 (126 million bbls) of crude oil were added to Alberta's recoverable reserves in 2002. Additions are a result of discovering new reserves and revising reserves that have already been discovered. Production in 2002 outstripped additions, contributing to a 5 per cent decrease in the remaining established reserves of crude oil to 260 million m^3 (1.6 billion bbls) as of year-end 2002. This reserve is composed of 75 per cent light-medium and 25 percent heavy crude.

Conventional Crude Oil Production and Producing Oil Wells



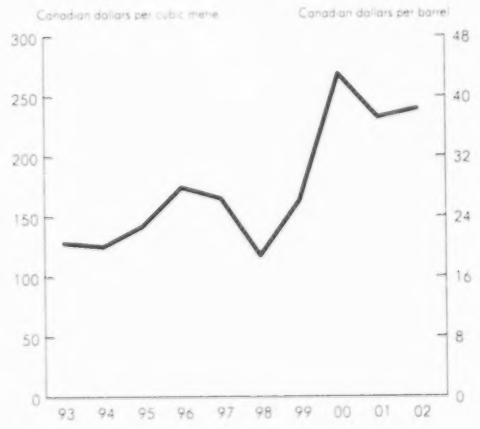
As production of crude oil continues, the remaining reserves become more difficult to access. Over the past several years, production of crude oil has declined in Alberta. In 2002, total crude oil production declined to approximately 105 thousand m^3/d (661 thousand b/d), a decline of 8 per cent.

Alberta Supply of Crude Oil and Equivalent



Generally, as production of light-medium and heavy crude oil has decreased, nonupgraded bitumen and synthetic crude oil (SCO) production has increased, creating a relatively stable production level over the last 10 years.

Average Price of Oil at Alberta Wellhead



In 2002, the price of oil at the Alberta wellhead averaged $239.10/$m^3$ in Canadian dollars ($38.00 per bbl). This is a 3 per cent increase over the 2001 price of $232.12/$m^3$ ($36.89 per bbl). For 2002, the price was lowest in January, at $178.69/$m^3$ ($28.40 per bbl), and highest in September, at $271.46/$m^3$ ($43.14 per bbl).

RESERVES, PRODUCTION, AND DELIVERIES: CRUDE OIL

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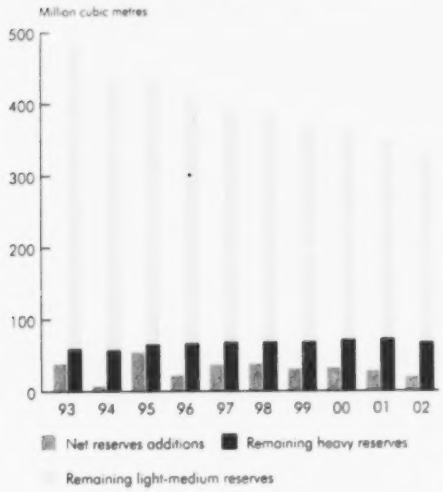

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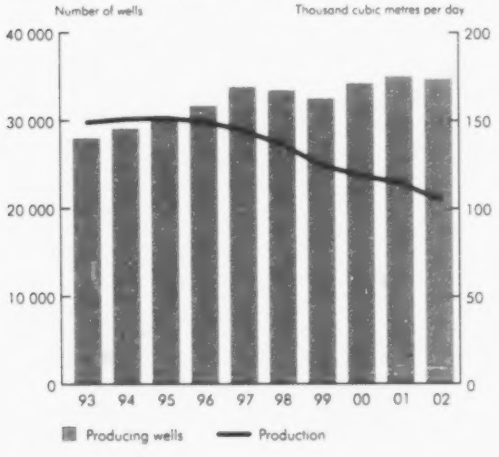

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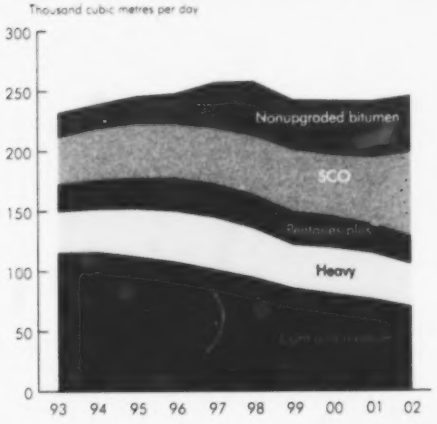

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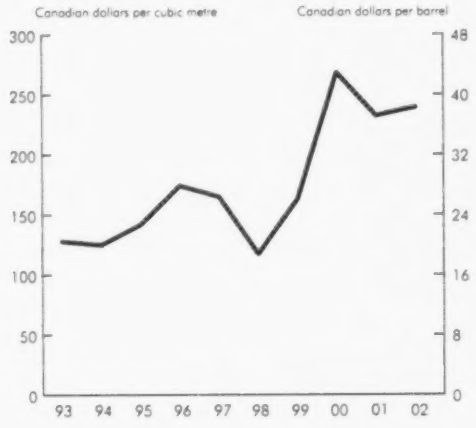

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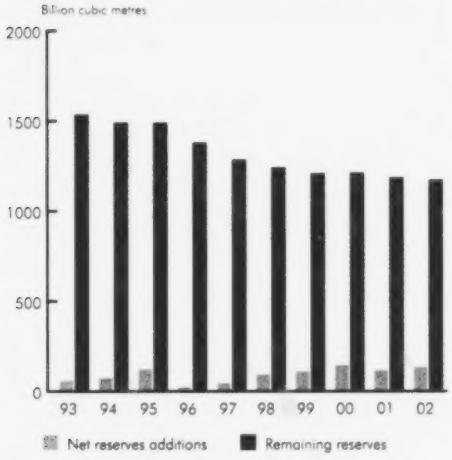
Deliveries of Crude Oil, Crude Bitumen, Synthetic Crude Oil, Condensate, and Pentanes Plus

Percentage of deliveries

In 2002, 76 per cent of Alberta's crude oil, crude bitumen, synthetic crude oil, condensate, and pentanes plus was delivered to other provinces and the U.S.A.

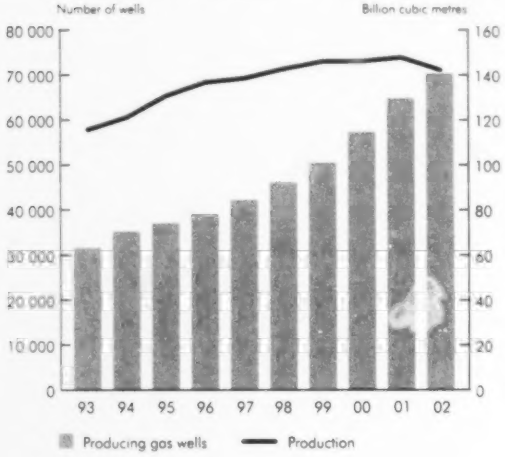
RESERVES, PRODUCTION, AND DELIVERIES: NATURAL GAS, NATURAL GAS LIQUIDS, AND SULPHUR

Marketable Gas:
Net Reserves Additions and Remaining Reserves



Some 134 billion m^3 (4.8 trillion cubic feet (cf)) of marketable gas were added to Alberta's recoverable reserves in 2002. Additions are a result of discovering new reserves and reassessing reserves that have already been discovered. Production in 2002 outstripped additions, contributing to an overall decrease of about 1 per cent in the remaining established reserves of marketable gas to 1171 billion m^3 (42 trillion cf) as of year-end 2002.

Marketable Gas Production and Producing Gas Wells

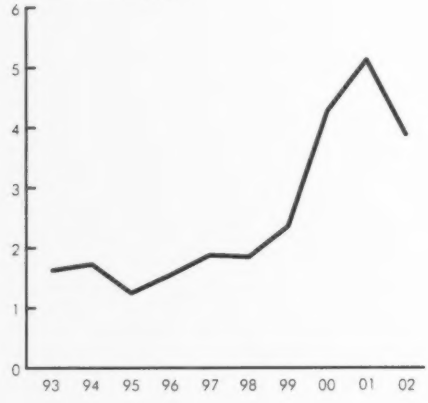


From 1993 to 1996, the annual growth in gas production was consistent with the annual increase in the number of producing gas wells. From 1996 to 2001, the number of producing gas wells increased significantly year over year, while gas production slowed. It now takes an increasing number of new gas wells each year to offset production declines in existing wells. This is due in part to the large number of new wells in southeastern Alberta, where well productivity is low.

In 2002, fewer gas wells were drilled than in 2001 and marketable gas production fell for the first time since 1986, by almost 4 per cent.

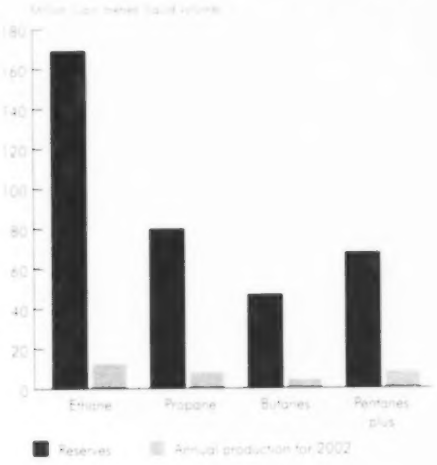
Average Price of Natural Gas at Plant Gate

Canadian dollars per gigajoule



In 2002, the average price of natural gas at the plant gate decreased to $3.88 per gigajoule (GJ) ($4.09/thousand cf) from $5.12/GJ ($5.40/thousand cf) in 2001. For 2002, the price was lowest in February, at $2.71/GJ ($2.86/thousand cf), and highest in December, at $4.94/GJ ($5.21/thousand cf). This overall annual decline is a change in the trend from 1998 to 2001 of consistent increases in natural gas prices at the plant gate.

Natural Gas Liquids: Remaining Reserves Expected to Be Extracted and Annual Production for 2002

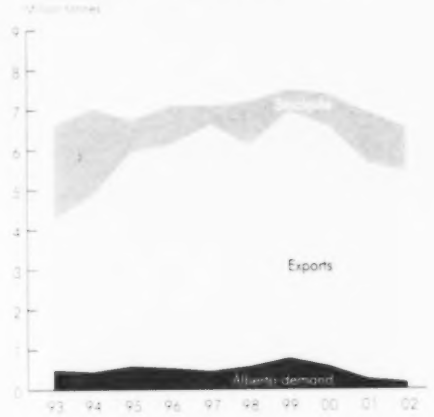


Production of all natural gas liquids in 2002 was virtually unchanged from 2001. Remaining reserves declined about 1 per cent from last year.

Deliveries of Gas

In 2002, 75 per cent of Alberta's gas was delivered to other provinces and the U.S.A.

Alberta Sulphur Production and Demand



Demand for sulphur within Alberta in 2002 was only about 0.2 million tonnes. It was used in production of phosphate fertilizer and kraft pulp and for other chemical operations.

Because elemental sulphur is fairly easy to store, imbalances between production and demand have traditionally been accommodated through adding to or removing from sulphur stockpiles.

Deliveries of Sulphur

In 2002, approximately 97 per cent of sulphur marketed by Alberta producers was shipped outside the province, primarily offshore.

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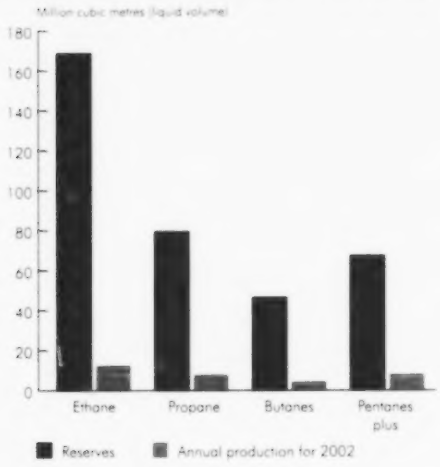

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Deliveries of Gas

Percentage of deliveries

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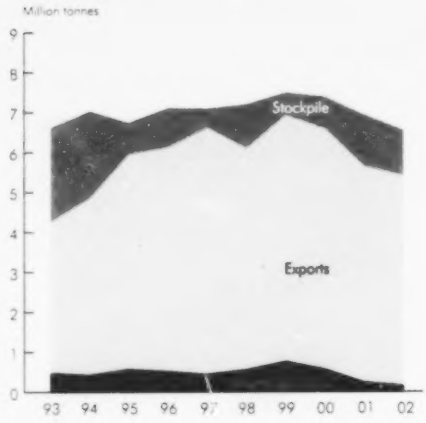

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Deliveries of Sulphur

Percentage of deliveries

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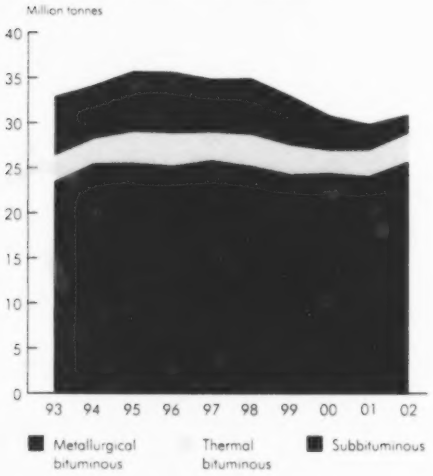
RESERVES, PRODUCTION, AND DELIVERIES: COAL

The current estimate for remaining established reserves for all types of coal is about 34 billion tonnes. This massive resource continues to help meet the energy needs of Albertans, supplying fuel for about 65 per cent of the province's electricity generation. Alberta's coal reserves represent about 1000 years of supply at current production levels.

Alberta Marketable Coal Production



Alberta marketable coal production totalled 31 million tonnes in 2002, a more than 3 per cent increase from 2001.

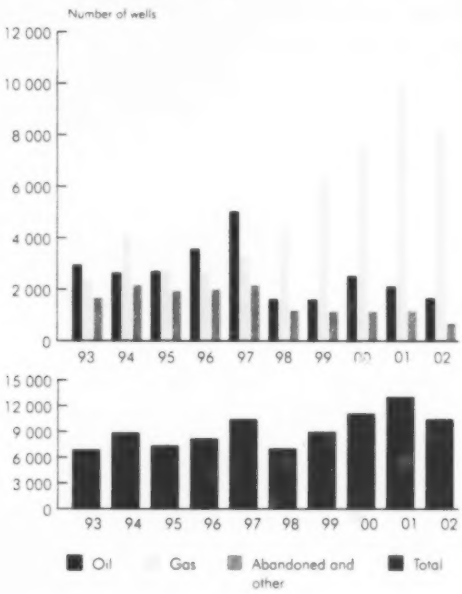
Deliveries of Coal

In 2002, 85 per cent of Alberta's coal stayed in the province, while 13 per cent was delivered offshore.

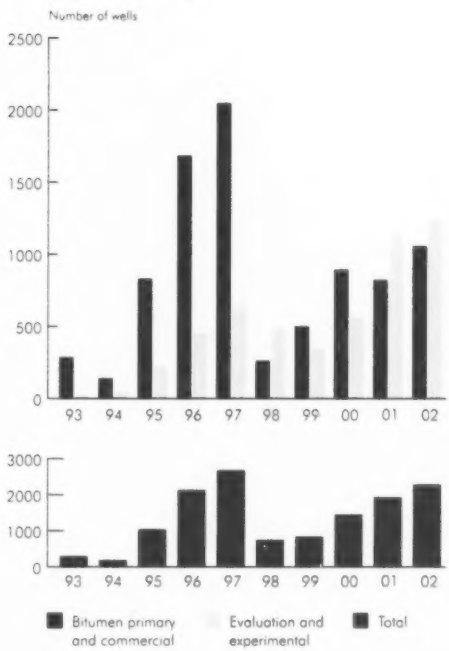
For more information on reserves, supply, and demand, including forecast information, see *Statistical Series (ST) 2003- 98: Alberta's Reserves 2002 and Supply/Demand Outlook 2003-2012*. For more information on resource deliveries, see *ST-3: Alberta Energy Resource Industries Monthly Statistics*. Information regarding coal production and deliveries is in *ST-26: Alberta Coal Industry Monthly Statistics*, and coal reserves information is in *ST-31: Reserves of Coal*.

DRILLING ACTIVITY

Oil and Gas Drilling



Oil Sands Drilling



In total, approximately 12 800 oil, gas, and oil sands wells were drilled in Alberta in 2002,[2] a 15 per cent decrease from 2001.

In 2002, conventional oil drilling decreased by 25 per cent and gas drilling decreased by 17 per cent, while oil sands drilling increased by 18 per cent. The increase in oil sands drilling continues its growth trend that began in 1999, after a sharp decline in drilling in 1998. Of the oil sands drilling in 2002, 46 per cent was for new bitumen primary and commercial wells and 54 per cent was for oil sands evaluation and experimental wells.

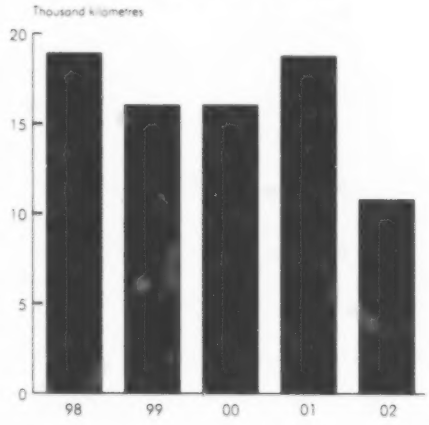
The EUB issued 14 415 well licences in 2002, 2721 fewer than in 2001. Looking back, 17 136 well licences were issued in 2001, 16 569 in 2000, 11 156 in 1999, and 8969 in 1998.

About 90 per cent of licensed wells are drilled each year, thus the discrepancy between the number of licences and actual drilling activity. Licensed wells include new wells, the resumption or deepening of existing wells, and re-entry of abandoned wells.

For more information on drilling activity in Alberta, refer to *ST-59: Alberta Drilling Activity Statistics*.

PIPELINES

Approved Length of Pipeline Additions



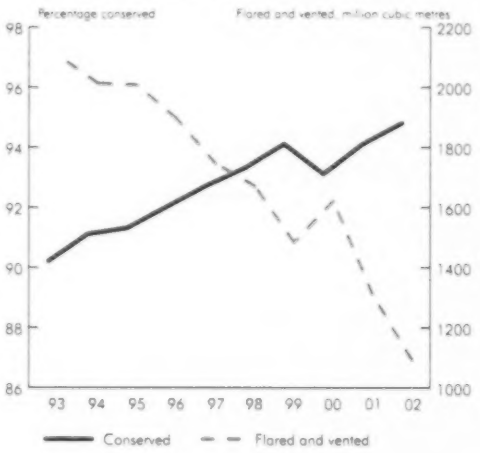
In 2002, the EUB approved construction permits for 10 799 kilometres (km) of pipelines wholly within Alberta, compared to 18 777 km in 2001. These permits allowed for the total length of intra-Alberta pipelines to increase to 317 417 km. This total length was calculated by adding all pipeline statuses (including operating, permitted, abandoned, discontinued, and suspended) for all types of pipelines. Pipelines crossing an Alberta border are regulated by the National Energy Board and are not included in these numbers.

For more information on Alberta's pipelines, see the pipeline section of *ST-57: Field Surveillance Provincial Summary*.

SOLUTION GAS FLARING AND VENTING

In 2002, a preliminary analysis of flaring and venting volumetric data indicates a continued decline in flaring and venting solution gas volumes and an increase in solution gas[3] conservation:[4]

Solution Gas Conserved, Flared, and Vented



Data show that flaring of solution gas has been reduced by approximately 62 per cent in 2002 from the revised 1996 baseline level. This reduction exceeds the 2001 target of 25 per cent by 37 per

2 For the purposes of this report, drilling activity includes wells that have finished drilling; it does not include spuds (new well starts) that were not completed in 2002.

3 Solution gas, as defined in *Guide 60: Upstream Petroleum Industry Flaring Requirements*, is all gas that is separated from oil or bitumen production.

4 Conservation, as defined in *Guide 60*, is the recovery of solution gas for use as fuel for production facilities, for other useful purposes (e.g., power generation), for sale, or for injection into an oil or gas pool.

cent, as recommended by the Clean Air Strategic Alliance and implemented by the EUB in *Guide 60*.

- The volume of solution gas flared and vented declined from the 1996 volume of 1808 10^6 m^3 to 1006 10^6 m^3 in 2002, an overall decrease of 44 per cent and a decrease of 18 per cent from 2001.

- The volume of solution gas produced in 2002 was 19 395 10^6 m^3, a decrease of 0.8 per cent from 2001.

- A record 94.8 per cent solution gas conservation rate was achieved in 2002, compared to 94.1 per cent in 2001.

A summary of the targets is given below:

Solution gas flaring reduction schedule

Year	Firm target reduction (%)	Actual reduction (%)
1999	None established	30
2000	15	38
2001	25	53
2002	None established	62

A breakdown of actual solution gas flaring and venting volumes for the last four years follows:

Year	Flaring (10^6 m^3)	Venting (10^6 m^3)
1999	937	459
2000	831	704
2001	624	600
2002	510	496

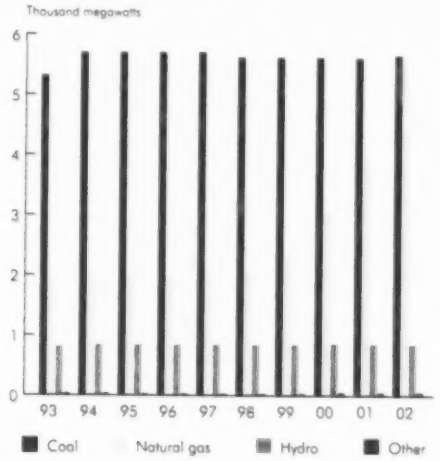
Solution gas flaring and venting volumes

Progress continues to be made in reducing solution gas flaring and venting. However, the EUB is concerned about the volume of solution gas continuing to be vented and has initiated a number of measures designed to achieve a reduction. One of these measures, announced in *General Bulletin 2002-05* and followed up by *Interim Directive 2002-02*, requires operators to evaluate solution gas vent sources and electronically submit summary-level conservation economics. The data received from these evaluations are currently being analyzed.

A complete summary of upstream petroleum flaring and venting will be available in the summer of 2003 in the EUB's *ST-60B: Upstream Petroleum Industry Flaring, Incinerating, and Venting Report*. This report is compiled from monthly production data that operators are required to submit and will contain updates and amendments to volumetric data, which may result in slightly different data from that given in this preliminary review.

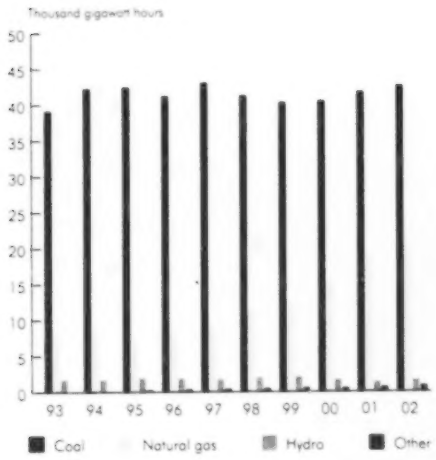
ELECTRICITY

Electricity Generation Capacity



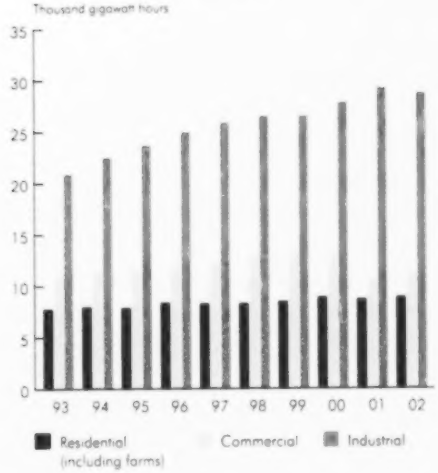
In 2002, Alberta's electric generating capacity increased to 11.1 gigawatts (GW) from 10.7 GW in 2001, an increase of almost 4 per cent. Most of this increase was due to the 9 per cent growth of gas-fired electricity capacity. Coal-fired electricity capacity increased almost 1 per cent, while hydro-electricity decreased almost 2 per cent over the same period. In 2002, wind plants contributed 95.8 megawatts (MW) of capacity, a decrease of 3.8 MW from 2001 but an increase of 74.5 MW since 1999 (1 GW=1000 MW).

Electricity Generation



Alberta's electric utilities generated 65.2 thousand gigawatt hours (GWh) of electricity in 2002. For context, 1 GWh can power 1 000 000 typical homes for a year. Coal-fired power plants generated 65 per cent of the province's electricity, while gas and hydro accounted for 32 and 3 per cent respectively. In 2002, wind plants contributed 323.2 GWh, an increase of 140.1 GWh from 2001 and an increase of 258.6 GWh since 1999.

Alberta Markets for Electricity



Alberta's 2002 electric energy markets increased by approximately 1 per cent to almost 49 thousand GWh. The rise in demand came from commercial users, which increased consumption by 6 per cent. Residential demand followed, with an increase of 2 per cent. The industrial sector's demand decreased by just over 1 per cent. This industrial demand does not include electricity generated and used on site. If on-site generation and use are included, this sector shows an increase of just over 9 per cent.

For more statistical information on Alberta's electric industry, see ST-28: *Alberta Electric Industry Annual Statistics.*

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